Aalto University
School of Business

EFFECTIVE CHATBOT CONVERSATIONS

Experiments with Bot Identity and Tone of Voice

Master's Thesis
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Abstract

Firms have been around the online world long enough to learn the skill of attracting visitors to the company website, whether by organic or paid means. What's lagging behind is their ability to convert that site traffic into new business. Average conversion rates are in most cases alarmingly low and, by physical store measures, practically suicidal. It is no surprise then that the marketing technology scene is booming with providers who obsess over driving conversion rates and online sales up. One of the most prominent solution categories in the space is chatbots and other conversational interfaces, which can be used as the corporate website's lead generation and sales engine, customer service function, and to bring overall enhancements to the online customer experience.

Chatbots are by no means a new innovation, but they have so far received little direct academic attention. More explored themes in the same domain include website interactivity, the state of flow and concepts related to online consumer behavior. This thesis contributes to the existing bodies of research by studying the effectiveness of chatbots on three live company websites with a true experimental research design. More specifically, the focus is on discovering how chatbot identity (brand – human) and tone of voice (formal – casual) influence the effectiveness of chatbot conversations in terms of conversions and engagement in dialogue.

Findings from three conducted studies give no conclusive answer to whether a bot with a branded or human identity, or formal or casual tone of voice performs more effectively than its counterpart. In some of the experiments, human identity and casual tone yield the best results, but in others, tables are turned in favor of a branded identity and formal tone of voice, or one of the other combinations. Even though the variants do not in all cases produce significantly different results, there is solid indication that choices related to bot identity and tone of voice matter.

Conclusions of the thesis suggest that the choice between a branded or human bot identity and formal or casual tone of voice should be made with the specific brand in mind. Furthermore, it is found that bot variants behave differently when placed in different stages of the buyer's journey. There is also evidence that suggests a categorical difference in user preferences between the contexts of B2B and B2C. These and other observations are listed as potential avenues for future research.

Overall, the set of mixed findings stresses the importance of understanding customers' needs and motivations, as well as their relationship with and expectations toward the brand. When the chatbot succeeds in addressing users' most pressing questions, it presents an attractive proposition for improving the website conversion rate and customer experience. But structure alone is not enough – results of the conducted studies show that matching the bot's identity and tone of voice with the brand is a reliable source of beneficial behavioral outcomes.

Keywords chatbot, company website, conversion, interactivity, bot identity, tone of voice

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Tiivistelmä

Yritykset ovat toimineet verkossa riittävän kauan osatakseen haalia verkkosivustolleen kävijöitä orgaanisin ja maksetuin keinoin. Sivuston kävijöiden konvertointi liikevaihdoksi laahaa kuitenkin selvästi perässä. Verkkosivujen konversioprosentit ovat keskimäärin alhaisia – kivijalkakaupan standardein täysin kestämättömiä. Ei siis ole yllätys, että markkinointiteknologian ala kuhisee, kun yhä useampi tarjoaja lupaa ratkaisullaan enemmän konversioita ja kauppaa asiakkaan verkkosivuilta. Kilpailu kiihtyy erityisesti chatbottien ja muiden keskusteluihin perustuvien käyttöliittymien kentässä. Ratkaisujen suosiota selittää monipuolisuus: botit voidaan valjastaa mm. tuottamaan liidejä ja myyntiä, vapauttamaan ihmisresursseja asiakaspalvelun tehtävistä tai parantamaan sivuston yleistä asiakaskokemusta.

Chatbotit eivät ole uusi innovaatio, mutta niihin on kohdistunut verrattain vähän akateemista huomiota. Botteihin liittyvä interaktiivisuus, verkossa koettu flow-tila sekä muut online-ympäristön kuluttajakäyttäytymiseen liittyvät käsitteet ovat olleet pääosassa. Tämä tutkimus kasvattaa tietoa mainituilla alueilla hyödyntämällä kokeellista metodologiaa, jossa tutkimusta varten luotujen bottivarianttien tehokkuutta mitataan konversioiden ja aloitettujen keskustelujen valossa. Tarkemmin, tutkimus selvittää, miten chatbotin identiteetti (brändi – ihminen) ja äänensävy (muodollinen – rento) vaikuttavat mainittuihin tulosmuuttujiin.

Tutkimuksen tulokset eivät tarjoa absoluuttista vastausta siihen, mikä identiteetti- tai äänensävymuuttujista tai näiden yhdistelmistä toimii luotettavasti tehokkaimmin. Joissakin kokeissa ihmisbotti ja rento äänensävy toimivat parhaiten, ja toisissa tulokset kääntyvät brändätyn botin ja muodollisen äänensävyn, tai jonkin muun yhdistelmän eduksi. Vaikka kaikista tehdyistä kokeista ei löydy tilastollisesti merkitseviä eroja varianttien välillä, on selvää, että botin identiteetin ja äänensävyn valinnoilla on merkitystä.

Yksi tutkimuksen merkittävimmistä johtopäätöksistä on se, että chatbotin identiteettiin ja äänensävyyn liittyvien valintojen tulee perustua ensisijaisesti kyseessä olevan brändin erityispiirteisiin. Lisäksi, tulosten perusteella on syytä olettaa, että verkkosivuston kävijän eli asiakkaan ostopolun vaihe vaikuttaa siihen, millainen botti toimii tehokkaimmin. Tulokset viittaavat myös siihen, että kuluttajien mieltymyksissä on kategorisia eroja B2B- ja B2C-kontekstien välillä. Nämä ja muita huomioita on listattu mahdollisiksi tulevaisuuden tutkimusaiheiksi.

Tutkimuksen vaihtelevat tulokset korostavat asiakkaiden tarpeiden ja motivaatioiden syvällisen ymmärtämisen tärkeyttä. Tämän lisäksi chatbottien käyttöönottoa suunnittelevien markkinoijien on syytä tunnistaa kuluttajien suhde brändiin sekä heidän odotuksensa sitä kohtaan. Kun chatbotti onnistuu vastaamaan kuluttajien päällimmäisiin kysymyksiin ja tarpeisiin, teknologia tarjoaa houkuttelevan vaihtoehdon konversioasteen kasvattamiseen ja sivuston asiakaskokemuksen kehittämiseen. Botin rakenteen viimeistely ei kuitenkaan riitä – tutkimuksen tulokset osoittavat, että chatbotin identiteetin ja äänensävyn sovittaminen yhteen brändin kanssa kasvattaa botin liiketoiminnallista tuloksellisuutta.

Avainsanat chatbotti, yrityksen verkkosivut, konversio, interaktiivisuus, identiteetti, äänensävy

PREFACE

My journey to this moment began in Porvoo, 2017. I vividly remember prepping for the GMAT in a mixed state of doubt and determination. I remember taking the test and, disappointed with my performance, navigating ankle-deep in slush back home through the darkness of Otaniemi. I remember receiving a notification of the admission ahead of time and refusing to believe it before hearing the official results. I remember receiving the welcome letter and feeling unreal.

I did not know what to expect. These twenty months have taken me to places, both physical and mental, where I couldn't imagine being. They have opened my eyes to new ways of looking at the world. They have introduced fantastic people and experiences. They have taught me about my ambitions and made me more confident. They have required a lot and given more.

I want to thank my family for support, Roosa for patience, Santtu for the opportunity, companies participating in this thesis for collaboration, and Alexei for assistance in the project. I also want to thank other Aalto professors and fellow students – you made me feel like a member of the community. Finally, I want to thank myself for putting in the hard work but also for the slack.

With these words, a file created on the grayest day of 2019 reaches its final version, on an equally gray day. I finish the thesis and my studies in a time of unprecedented social distancing. The world has never looked like it does today, and no one knows what comes next.

But isn't that what life is all about.

Helsinki, 12 April 2020
Otto Antikainen

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1 Introduction

This research paper begins with a reflection on the state of online business and the roles of marketing and websites therein. Specific figures are intentionally omitted from this introduction, since the field is rushing forward at such an immense pace, that any fixed numbers would become irrelevant in a matter of months. The aim is rather to provide background information related to the topics of interest. This chapter also covers the main research question and objectives as well as clarifies the scope and structure of the thesis.

1.1 Background

In a digitized business environment, the corporate website has become the hub of company-related information and a key channel for doing business, whether in a business-to-consumer (B2C) or business-to-business (B2B) context. Firms pour lots of money and resources into designing and building websites, and then continuously spend more resources to direct traffic to those sites with various campaigns and marketing efforts. Annually, billions of dollars are spent on online advertising with the objective of driving consumers to websites that are built to induce purchases, provide information or entertainment, or build brand preference (Tung, et al., 2006). Despite these efforts, websites fail royally in converting acquired visitors into leads and customers, meaning that a large chunk of made investments does not yield easily quantifiable results, namely in the shape of sales.

In fact, the average conversion rate for an ecommerce site lingers around 2%, which indicates that in most cases approximately 98% of website traffic leaves the site without completing a transaction (Growcode, 2020). In a B2B context, conversions often take a different shape as for example contact requests and material downloads. One of the main reasons behind the modest results is the fact that the structure and content of the website is not engaging enough to activate visitors to perform actions that would lead them to desired outcomes. Hoffman & Novak (2000) stressed already in the early years of corporate websites, that most companies have practically suicidal customer acquisition costs when compared with the average lifetime value of a customer. This alarming observation is recognized by a growing amount of companies around the world, which in turn presents opportunities for product and service providers who make claims about increasing website conversion rates with various technological solutions.

What makes this an interesting setting is that every day more buyers resort to digital channels in their consumption, and this shift in consumer behavior urges companies to include new platforms to their sales channel mix, or at least to improve existing ones. While commercial websites have been around for decades, they still prevail as the primary platform for online purchases. However, with the rise of other modern consumer-facing technologies as selling platforms, company websites may be in danger of becoming obsolete as sales channels. The 2020s are set to reveal many interesting things about the future of websites. Still, whether the observation horizon is set at 10 years from now or at tomorrow, an increased website conversion rate is an attractive proposition for any business looking to remain competitive.

1.2 Research Objectives

The goal of this thesis is to explore the issue of low website conversion rate and provide guidance to practitioners in creating better engagement with their website visitors and thus achieving higher returns on their marketing investments. More specifically, the current research focuses on how an emerging marketing technology – conversational chatbots – can be used for activating website visitors and enhancing the customer experience, which can lead to an increase in the conversion rate of the website. The thesis aims to increase understanding of how a bot's identity and tone of voice are associated with the behaviors of engaging in a dialogue with the corporate website and converting to a new business lead or customer.

In the review of existing theories, the thesis covers research streams related to online consumer behavior and customer experience, interactivity and flow, human-computer interaction, and concepts central to the chosen attributes that are manipulated in the experiments of this study. Most of the mentioned concepts have been studied for decades but are still contested over how they should be operationalized in the real world. As the thesis approaches these concepts from a novel angle and with an untested design, it inevitably complements prior research in these areas.

The empirical part approaches the issues of interactivity and conversion rate from a practical standpoint, as field experiments are run on live corporate websites. This enables collecting data with high contextual relevance, as test subjects visit the website with genuine motivation and unaware of participating in an experiment. Randomizing different bot variants to website visitors as a multivariate test further eliminates selection bias and increases the reliability of results. It is

expected that the chosen methodology produces highly accurate and therefore valuable data about the tested attributes.

With these specifications, the thesis strives to fill identified gaps in the existing body of research. For example, Song & Zinkham (2008) suggest testing personalized website functions and other features that facilitate online transactions. More specifically, they call for studies that look further into the effects of social presence and related cues (e.g. sense of communicating with a real person and use of accent or familiar name) on website users' interactivity perceptions and the resulting behavior. Also, the impact of interactive features and resulting effects on firm performance, namely return on investment, remain an area that may present valuable findings (Song & Zinkham, 2008). The thesis answers to Voorveld et al.'s (2013) call for experimental studies that manipulate the actual interactivity of websites. Related to this, Ariely (2000) points out that user preferences should be examined with information system characteristics and the user-website dialogue – the experiments run in this study manipulate characteristics of the dialogue to find preferences and compare behavioral outcomes. Regarding chatbots, the thesis addresses Hassanein & Head's (2007) suggestion by manipulating the social presence of the website.

To address the objectives discussed above, a research question is posed as a summary of what the research aims to accomplish. The research question focuses on user preferences and therefore encompasses beneficial business outcomes related to the performance of manipulated chatbot attributes:

How do chatbot identity (brand – human) and tone of voice (formal – casual) influence the likelihood of conversion and engagement in dialogue on a corporate website?

1.3 Scope and Structure

Commercial websites play a significant role in all stages of the customer journey, which makes them a suitable testing field for a study that is closely linked to online consumer behavior. The website is where people go to find information about companies and offerings, return to when seeking assurance to back up their decision, and often also make the final transaction and become customers. The thesis is positioned in the fast-paced field of marketing technology, where an

abundance of solutions pops up on the constant and often becomes obsolete equally quickly. Therefore, rather than making the technology a hero of the study, the thesis seeks to contribute to knowledge about consumer behavior.

The current research studies the moderating effect of two attribute pairs on the effectiveness of conversational bots: bot identity (brand – human) and tone of voice (formal – casual). Field experiments are run on live corporate websites of three companies. The choice of participating companies supports a smooth experimentation. First, the firms have already implemented the conversational bot technology on their website. Second, traffic to the chosen websites is high enough to ensure a good sample size within a reasonable timeframe. Due to the aforementioned reasoning, and to provide more general findings, there is no distinct industry focus. Participating companies' core business (and the website) targets either business customers (B2B), consumers (B2C), or both. While there are some undeniable differences between the contexts of B2C and B2B, this research makes an effort to advance the view that business is fundamentally human-to-human (H2H). Due to this, for example Chapter 2.1 considers notions about consumer behavior to be true in both contexts, since even in organizational buying, the person who visits a website acts in the process as an individual, meaning that the same constructs are at play as when the person is browsing websites in a B2C instance. The following paragraph pinpoints key limitations related to the scope of the research.

This research does not focus on the technical aspects of implementing the marketing technology, albeit it touches on the basics of conversational bots in order to provide a concrete illustration of how the technology used in the empirical part works, and what the test subjects are faced with. Furthermore, it should be noted that neither the concepts nor implementations of artificial intelligence (AI), machine learning (ML), or natural language processing (NLP) are of interest in this study. While it is likely that conversational bots will be taken over by these technologies in the coming years, the bot implementations used in the experiments are not based on these concepts. Rather, the experiments deal with bots that consist of a defined set of conversation paths and response options. This not only supports but also improves the experimental setting, as it is ensured that test subjects receive a uniform treatment that provides comparable results.

Following this introductory chapter, the structure of the thesis proceeds in the following order. In Chapter 2, relevant literature and concepts are explored in an effort to understand the context and

construct a theoretical framework to be used as a foundation for the empirical part and discussion. The literature review consists of three parts. First, the drivers of online consumer behavior and customer experience are examined to gain an understanding of the commercial online environment. The second part discusses what is known about the internet's most prominent feature, interactivity, and how it influences consumers in the online space by for example inducing experiences of flow. Finally, attention is turned to human-computer interaction and conversational chatbots in a review of their purpose and the fundamentals of a bot's identity and tone of voice.

Based on the literature review, hypotheses are stated as a final step before continuing to the empirical part. Chapter 3 defines the chosen methodological research approach and describes the processes of data collection and analysis. Also, choices related to the research design are discussed. Chapter 4 presents the statistical analyses and results of the experiments. Both experiment-specific and overall findings are listed. Chapter 5 discusses the meaning of the findings and relates them to known theories and prior research. Finally, Chapter 6 reflects on the results' implications to theory and managers. The thesis concludes with research evaluation and discussion of known limitations, as well as suggestions for future research.

2 Literature Review

The review of existing theoretical concepts is divided into three parts. First, Chapter 2.1 aims to form an understanding of consumers' online behavior and decision-making, by focusing on vastly studied phenomena from the areas of marketing and advertising, consumer research, and social psychology. Chapter 2.2 discusses what is known about interactivity and the concept of flow in online environments. Chapter 2.3 takes one more step towards the empirical part, as it explores human-computer interaction and concepts that are central to the experiments of this study. As mentioned in Chapter 1, B2C and B2B buyers are assumed to be affected by the same constructs when browsing company websites. Therefore, no explicit distinction is made between the two cases, but the thesis talks about consumers and customers in general.

2.1 Online Consumer Behavior

To understand associations and possible correlations between a marketing technology, such as conversational bots, and consumers' behavioral outcomes, an investigation of the online environment and drivers behind online consumer behavior are necessary. This section of the literature review sheds light on constructs that are linked to consumers' behavior and decision-making online.

2.1.1 Theories and Customer Experience

Corporate websites can be considered a form of digital advertising, which means that the Elaboration Likelihood Model (ELM), presented by Petty et al. (1983) is a relevant concept to the current research. The ELM framework argues, that how the user resorts to central and peripheral routes for information processing depends on their level of involvement with the context (Petty, et al., 1983). The framework is formed around the degree to which an individual thinks about relevant information: elaboration likelihood is low when the individual's motivation and thus involvement are low, and high, when motivation and involvement are high. Central information processing routes are active when motivation and involvement are high, and peripheral routes are used for processing in low-involvement contexts (SanJosé-Cabezudo, et al., 2009).

An important advertising implication of the ELM is that different audiences will find different kinds of messages appealing. In high-involvement situations (especially when purchasing a

product), the persuasiveness of key product-related information defines how favorable or unfavorable attitudes the consumer will form (central route). In contrast, when the consumer does not actively consider purchasing (low involvement), s/he does not expend cognitive resources on processing rational information, but may be influenced more by other things, such as attractiveness or prestige (peripheral route). (Petty, et al., 1983).

Because users actively and voluntarily search for and browse websites, exposure to a site is considered a high-involvement context, i.e. the user is motivated to process the content on a website (Cho, 1999). This implies that highly involved users should focus on central arguments and informative content, and not be influenced by website format, i.e. how the content is presented to the user, which Cho (1999) describes as a peripheral cue. However, peripheral cues are still relevant in influencing affective states and emotions experienced by the user (Petty, et al., 1981). Furthermore, in their study, SanJosé-Cabezudo et al. (2009) discovered that the presentation of a website influences users' attitudes in a high-involvement setting. Their key conclusion is, that in contrast to the orginial ELM framework's suggestion, central and peripheral routes of information processing act together in an online context (SanJosé-Cabezudo, et al., 2009).

In addition to the ELM, the theories of reasoned action (TRA) and planned behavior (TPB) have been linked to online shopping behavior (Rahnamaee & Berger, 2013). TRA posits that intentions and thus behavior depend on information about the likelihood of a specific outcome, whereas TPB also includes perceived control over the behavior as a predictor (Madden, et al., 1992). Another concept affecting behavior is the user's need for cognition (NFC), which reflects a person's need to put effort into cognitive information processing (Cacioppo & Petty, 1982). Users with high NFC will appreciate the effort and are thus more inclined towards using the central route, while low NFC makes people rely on the peripheral route and heuristics (Cacioppo & Petty, 1982).

Several studies have shown that the product-service as well as the hedonic-utilitarian dichotomy applies to online shopping, which has implications for users' behavior on websites (Verhagen, et al., 2010). Regarding the former, intangibility is the most significant differentiator, causing visitors to perceive the purchase of services riskier (Laroche, et al., 2005). Following from this, users who seek to purchase services value website features and content that facilitate evaluation of risk and alternatives (including comparisons, help options and personalization), suggesting that corporate

websites with service offerings should put efforts into providing such support (Verhagen, et al., 2010).

Finally, the technology acceptance model (TAM) builds on TRA by including perceived usefulness and ease of use of a computer system as predictors of the user's behavioral intention and actual use of a system (Davis, et al., 1989). Relevant to the current research, for example Childers et al. (2001) draw on TAM to posit that interactive technologies can be used to enhance the usefulness, ease of use, and enjoyment of a computer system for the user and that the technologies are therefore effective in influencing consumers' attitudes and behavior.

A corporate website's ability to induce favorable attitudes and behavior boils down to the experience of the person using the site. This thesis approaches the phenomenon from a business perspective, and thus uses the term customer experience (CX) instead of user experience (UX), which is design terminology for the fluency with which the site's design elements and content allow a user to achieve their goals on the website (Hassenzahl & Tractinsky, 2006). According to Lemon & Verhoef (2016), customer experience has become one of the leading managerial objectives in recent years due to a sizeable increase in the number of customer-firm touchpoints. Channels and media have become extremely fragmented, and so customer journeys have become more complex, including more moving parts to be managed (Lemon & Verhoef, 2016).

Customer experience is defined as "the internal and subjective response that customers have to any direct or indirect contact with a company" (Meyer & Schwager, 2007), which may involve different levels of involvement from the customer (Rose, et al., 2012). In a more detailed review, Lemon & Verhoef (2016) draw from several definitions to conclude that customer experience is a multidimensional construct that takes into account "a customer's cognitive, emotional, behavioral, sensorial, and social responses to a firm's offerings during the customer's entire purchase journey". Rose et al. (2012), too, confirm the that customer experience is accumulated over time, in subsequent encounters with a firm. Specifically related to online CX, Rose et al. (2012) suggest that a customer's sense of control and empowerment have become more important in shaping customer experiences than the visual design, features, or functionalities of corporate websites. They support TAM and TRA in the view that, despite technological advances, ease-of-use remains the primary feature that influences customers' perceived control and therefore their affective state and behavior. Along this, customization and challenge are predictors of a positive customer

experience. This serves as a reminder of the fact that adding technology for technology's sake is not a viable strategy, but that it should have a use case that supports the empowerment required to form a positive customer experience. (Rose, et al., 2012).

In a world of an increased number of stimuli and shortened attention spans, the first impression of a website can make or break a relationship between a customer and a brand. Even a site with logically arranged and valuable content will lose grip of visitors whose first impressions are negative, because users' emotions are triggered more quickly than rational responses (Lindgaard, et al., 2006). Lindgaard et al. (2006) found that users make a reliable decision about their liking of a website in just 50 milliseconds. The primary pressure that web designers face, is therefore to create a positive first impression, no matter the website's content and purpose (Lindgaard, et al., 2006). A good first impression can result in a positive long-term effect referred to as the halo-effect (Nisbett & Wilson, 1977) or alternatively as confirmation bias (Mynatt, et al., 1977). Both concepts refer to a phenomenon in which a person or user searches for confirmatory evidence that supports their initial impression and ignores evidence that goes against it. In other words, the first impression, whether positive or negative, will be amplified in subsequent interactions with the site.

Novak, Hoffman and Yung (2000) point out, that marketers are beginning to understand how to attract visitors to a website, but that little is known about what factors make a positive customer experience on the web, let alone what behavioral outcomes can be expected as a reward for providing one. Based on their study, Novak et al. (2000) present customer support as the key factor in compelling online customer experiences, and mention easiness of ordering, contacting, and payment as some of the other factors supporting a smooth experience. While ease of use and the overall smoothness are central to a compelling online CX, a website should provide enough challenge for the user in order to maintain their focus on the interaction (Novak, et al., 2000).

Related to this, researchers who have evaluated websites from a design perspective, including Rosen & Purinton (2004), have a clear stance on what kind of an experience the website should provide. They suggest that a website's design goal should be access, not abundance: the site should be simple and not result in information overload (Rosen & Purinton, 2004). Another relevant notion related to web design is that different audiences have different goals and expectations when visiting a site (Rosen & Purinton, 2004). Even for a single company's website, there are several different user segments whose expectations should be taken into account.

The many-to-many communication model brought up by the internet allows users to communicate with companies and other users, but also with the commercial environment itself, and in that way control the interactions more than in traditional media (Novak, et al., 2000). Web 2.0 has transformed customer experiences into moments of co-creation between the customer and the firm (Rose, et al., 2012). What users expect from a co-created and positive online CX is a high level of personalization that makes it easy to find relevant content (DiPiazza & Hardy, 2014).

2.1.2 From Stranger to Customer

To take a step from the multidimensionality of customer experiences towards the more concrete, this chapter discusses the customer journey. As Lemon & Verhoef (2016) put it, a customer journey is the process that flows from pre-purchase to purchase and post-purchase, and makes up the customer experience. In each stage of the process, the customer encounters the firm in various touchpoints, which may or may not be controlled by the firm, and this control determines how successfully the firm is able to manage the touchpoints and thus the resulting customer experience (Lemon & Verhoef, 2016). For the purposes of the current research, the stages of pre-purchase and purchase are of most interest, as they are where customers convert, i.e. take actions that move them toward becoming a customer.

According to McDowell et al. (2016), almost 96% (nearly 99% for mobile devices) of website visits do not end in a purchase, which means that online customer acquisition costs remain high. Conversion rate is defined as the percentage of website visitors who make a purchase (or perform another defined action) out of the total amount of unique visitors on the website or specific page. A low conversion rate means that most of the visitors do not take a desired action, and that the company's investments in acquiring those visitors have gone (at least partially) to waste. Thus, even a small improvement in conversion rate can radically improve a company's profitability. Importantly to the current research, McDowell et al. (2016) found a positive association between website conversions and features that positively affect flow, a concept that will be discussed in chapter 2.2. More specifically, their research found that early engagement with the user is an important factor supporting conversions (McDowell, et al., 2016).

Online behavior has been dichotomized into goal-oriented and exploratory, where the former denotes a situation in which a user has a specific purchase or action in mind, and the latter refers

to users who are less deliberate about, or even consciously against, making a purchase (Moe, 2003). An alternative way to consider website visitors' motivations is to see everyone as goal-oriented. What then makes the difference between those who buy and those who don't, is the phase of the buyer's journey that the visitor is in. For the purposes of the thesis, it is sufficient to recognize that not all website visitors are equally ready to convert – some are very deliberate, and others are still collecting information to support their final decision.

In their study on conversions, Montgomery et al. (2002) present findings that support the view that online retailers should treat consumers differently, depending on whether they are in a browsing state or a purchasing state. For example, the study showed that the amount of pricing information is positively correlated with purchase intention for visitors in the purchase stage, whereas more pages with promotions had a negative correlation. The opposites were found to be true for visitors in a browsing state. (Montgomery, et al., 2002). This notion is directly linked to what has been discussed about the ELM in the previous chapters.

Trust prevails as the main hurdle that companies need to overcome in order to convert website visitors. Schlosser et al. (2006) point out that establishing trust is particularly difficult in online environments due to lack of tangibility and, in many cases, limited experience with the firm. Especially in the case of a purchase, a successful conversion requires transferring sensitive information (e.g. contact and credit card details), which could result in damaging consequences. Therefore, when a consumer shows their intention to purchase online, it is essentially a sign of trust toward the firm's ability to deliver according to the agreed details of the transaction (Schlosser, et al., 2006).

Schlosser et al. (2006) found that website investment has a significant influence on online purchase intention, albeit the effect is stronger in high-risk situations and less critical when risks involved in the purchase behavior are low. An important implication from this is that in order to be able to make effective investments in the website, the company needs to know the reasons why users visit the site, and whether related purchase behavior is considered as high- or low-risk (Schlosser, et al., 2006). Among others, Bauer et al. (2002) have found a close connection between trust, satisfaction, and commitment, indicating that companies can benefit from personalizing the online CX to support one or all of these dimensions. Rose et al.'s (2012) finding that repurchase intention is positively influenced by trust and satisfaction supports this view.

The challenge of examining website effectiveness in converting visitors spans several fields of research and practice, including marketing, psychology, usability, and computer science (Jankowski, 2013). At the same time, the multidimensionality of the online customer experience makes studying conversion rates a complex task (Moe & Fader, 2004). In other words, attributing conversions to certain features or elements can be extremely difficult, and this is not made easier by the fact that conversions come in many forms and may involve very different levels of commitment from the website user. Furthermore, as Jankowski (2013) points out, efforts to maximize website effectiveness may result in negative effects in terms of decreased usability and increased intrusiveness. Due to these challenges, it is useful to consider the concept of online engagement (Mollen & Wilson, 2010). Mollen and Wilson (2010) define online engagement as "cognitive and affective commitment to an active relationship with the brand as personified by the website" that manifests as dynamic and sustained processing of the experienced brand narrative of the website, denoting that it is at least partially a prerequisite for conversion. Online engagement (or the lack of it) can therefore explain why and when website users convert.

2.2 Interactivity and Flow

Interactivity is the main differentiator between the web and traditional media, as it enables and invites users to co-create their experience with a firm. As the thesis studies conversational bots, which are an inherently interactive website feature, it is important to explore what interactivity is and how it can induce the state of flow and inspire desired behavioral outcomes in an online environment.

2.2.1 Website Interactivity

Technological advances have brought back interactivity to mass communication (Ariely, 2000). Tung et al. (2006) state that what differentiates websites from traditional media is the user's ability to control the content in an interactive manner. An extensive body of research identifies interactivity as actual and perceived interactivity. This thesis primarily studies actual interactivity, i.e. "the objective presence of interactive features on a website" (Voorveld, et al., 2013), as the experiments manipulate characteristics of conversational chatbots. As a concept, perceived interactivity is nevertheless equally important, since it takes into account "the extent to which website users perceive the website as interactive" (Voorveld, et al., 2013), that is, "the degree to

which the user perceives that the interaction or communication is two-way, controllable, and responsive to their actions." (Mollen & Wilson, 2010).

General definitions of interactivity vary with the lens through which researchers observe the phenomenon. The best-fitting definition for the purposes of the thesis comes from Liu & Shrum (2002), who define interactivity as "the degree to which two or more communicating parties can act on each other, on the communication medium and on the message, and the degree to which such influences are synchronized". Accordingly, the core dimensions of interactivity are two-way communication (the ability for users and companies to communicate reciprocally), synchronicity (the degree to which communication between the parties happens without delay), and active control (the degree of a user's ability to take voluntary actions that directly influence the resulting experience) (Liu & Shrum, 2002). Two-way communication and speed of response (i.e. synchronicity) are identified as the most important aspects of interactivity by others as well, including Alba et al. (1997). However, Liu (2003) stresses that giving users control over the information flow and allowing them to customize the content and direction of the interaction are in the core of effective interactivity. Therefore, active control is included in Figure 1, which depicts actual and perceived interactivity in consumer-firm relationships.

Wu's (2006) conceptualization breaks down perceived interactivity into three components; perceived control (over navigation, pace, and content), perceived responsiveness (from the brand, navigation, and persons online), and perceived personalization (as if the site was a person, as if it wanted to know the visitor, and as if it understood the visitor). The construct for the most part matches the elements of interactivity (active control, synchronicity, and two-way communication) in Liu & Shrum's (2002) definition. This can be seen in Figure 1, where only perceived personalization is left without an accurately matching pair on the interactivity side, indicating that two-way communication should convey the personalization aspect of interactive features.

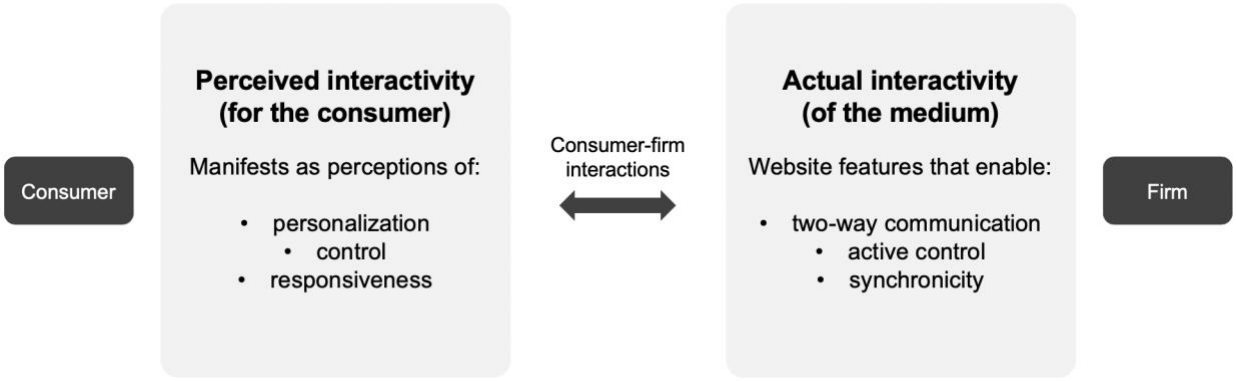

Figure 1. Perceived interactivity (Wu, 2006) and actual interactivity (Liu & Shrum, 2002) in consumer-firm interactions.

The influence of interactivity is based on the perceptions of control and reciprocity, which suggest to consumers that there is a relationship between them and the brand (Voorveld, et al., 2013). For example, research conducted by Voorveld et al. (2013) showed that website interactivity influences brand relationship quality and brand image positively. Furthermore, the effect was weaker for those who regularly use the brand and stronger for those who don't, which led them to conclude that interactivity is more important in building rather than maintaining relationships between consumers and brands (Voorveld, et al., 2013). Research by Yoon et al. (2008) supports the view that interactivity effectively enables relationship building online. More specifically, two-way communication and synchronicity were found to positively influence users' perceptions of relationship investment from the company's side (Yoon, et al., 2008). Related to the technology acceptance model, Thorbjørnsen et al. (2002) found that personalized websites have a stronger effect in building consumer-brand relationships for users with high levels of internet experience.

Song & Zinkham (2008) refer to an interactivity theory that views interactivity as a process of information exchange, where the reciprocity of communication (i.e. message quality) is the most important determinant of interactivity. According to this view, interactivity perceptions are enhanced when a website's response is related to the user's prior message (Song & Zinkham, 2008). Their findings confirm this theory, as it is found that message quality is a stronger predictor of perceived interactivity than properties of the medium (Song & Zinkham, 2008).

Liu & Shrum (2009) make an interesting observation about interactivity in relation to the levels of consumer involvement and elaboration. They posit that high interactivity that elicits extensive elaboration may either support or hinder the persuasiveness of the interaction: interactivity can provide increased control which facilitates persuasion, but increased levels of elaboration that come with it require additional cognitive resources and may thus make it more difficult to process relevant information (Liu & Shrum, 2009). In high involvement situations, experienced web users benefit from the facilitating effect of interactivity, rendering highly interactive websites more effective, whereas inexperienced users' attitudes become less positive as the interactivity of the site increases (Liu & Shrum, 2009). When involvement is low, users do not engage in extensive interactions, so interactive features affect their attitudes as peripheral cues (Liu & Shrum, 2009).

In general, interactive features are aimed at increasing the duration of the visitor's experience on the website, affect brand attitude, and increase purchase intention (Tung, et al., 2006). According to McMahan et al. (2009), interactive features present firms with an opportunity to differentiate from their competitors by giving consumers control over how the consumer-firm relationship develops on the website. Burke (2002) stresses that such features must be easy to use and that they must relate to the site visitor's current needs. Häubl & Trifts (2000) agree and refer to interactive decision aids primarily as a desirable form of personalizing the shopping environment and helping customers toward the purchase decision.

Unintuitively, increasing the mere number of interactive features on a website does not guarantee higher interactivity perceptions (Voorveld, et al., 2011). Voorveld et al. (2011) mention that in fact, the most common interactive features do not even contribute to perceived interactivity, because visitors are so used to encountering them on websites. McMahan et al. (2009) concur and state that having too many interactive features on a site may become counterproductive in facilitating online communication between a customer and a firm. Burke's (2002) findings go one step further and show that technology-intensive shopping aids may easily cause negative reactions, namely due to perceived intrusiveness. Brands are thus constantly under pressure to seek new ways to create positive perceptions of interactivity. By nature, interactive features counter traditional advertising concepts, such as the AIDA (attention, interest, desire, action) model, which considers consumer-brand communication as one-way, where the consumer is only a receiver of messaging (McMahan, et al., 2009).

So far, researchers have successfully shown a positive association between perceived website interactivity and consumers' attitudes towards the website and the brand (Voorveld, et al., 2013). Others have confirmed that interactive websites induce more information processing, favorability toward the site, and a more intense flow state (Sicilia, et al., 2005). The user's choices are influenced by not only how they interact with the site, but also by how the site adapts to the user's actions (Rust & Lemon, 2001). Tung et al. (2006) have suggested that websites that use brands interactively can enhance users' mood and attitudes. They imply that interactive experiences with peripheral activities and features, not just with the focal product of interest, affect how the user feels about the company's messaging conveyed via the website (Tung, et al., 2006). On the other hand, by providing interactive features, companies can present website visitors only the information that is appropriate for their specific needs. Ariely (2000) notes that, to the customer, this appears as information control, which means increased control over the content, order, and duration of relevant information and increases the value and usability of such information over time.

Burke (2002) fittingly concludes that "consumers are not interested in technology for its own sake" but that they are rather looking for a convenient customer experience that provides the information and support that they need, when they need it. The statement supports the research angle of focusing on qualities of interactive features as they affect consumer-website interactions, rather than studying the technology itself. While measuring perceived interactivity is outside the scope of this study, it is acknowledged to be a prerequisite and a driving force behind engagement with the site and resulting behavioral outcomes.

2.2.2 Experiencing Flow Online

Discussion about website interactivity and online consumer behavior would be incomplete without addressing the concept of flow. While this thesis does not empirically measure flow, it is an important concept, because it can help explain the connection between interactivity and behavioral outcomes such as conversions. The state of flow is a construct that Csikszentmihalyi (1990) defines as a holistic sensation of acting with total involvement. Achieving flow means that a consumer's senses of time and place become distorted, as he or she experiences a continuous and gratifying stream of actions (Csikszentmihalyi, 1990). Flow is closely linked to the concept of telepresence, i.e. the illusion of being present in a place or engaged in an activity transmitted via a mediated

environment (Steuer, 1992). Telepresence can be experienced for example when watching the news or playing video games (Song & Zinkham, 2008) or when interacting with computer-mediated environments, namely websites (Hoffman & Novak, 1996). Mollen & Wilson (2010) define telepresence as "the psychological state of 'being there' in a computer-mediated environment, augmented by focused attention [and] characterized by cognitive and sensory arousal, control, and immersion".

Telepresence and flow are both experiential states that can be enhanced with interactivity. For example, Coyle & Thorson (2001) found that perceived telepresence increased with the level of website interactivity. In another study, Sicilia et al. (2005) found evidence that interactivity enhances the intensity of flow and thus the persuasiveness of the website. Steuer's (1992) telepresence theory suggests that interactivity perceptions are affected by both the properties of the medium and a person's relationship to the medium, rendering perceived interactivity higher when the medium responds or reacts quickly. According to this theory, the mediated environment is created and experienced as information is transmitted (Steuer, 1992). In this vein, for example a website is 'incomplete' without the information exchange between a user and the site, that is, without the interactions.

In the context of the internet, the strength of flow is determined by the extent to which a user feels present in the mediated environment and ignores their physical surroundings (Sicilia, et al., 2005). The flow state is formed in a continuous sequence of information exchange between the user and the website and, during this sequence, telepresence and interactivity can enhance the experience of flow (Hoffman & Novak, 1996). Novak et al. (2000) define flow state on the web as "a cognitive state during online navigation that is determined by (1) high levels of skill and control; (2) high levels of challenge and arousal; (3) focused attention; and (4) is enhanced by interactivity and telepresence". The researchers further characterize users in flow as so fully involved in the activity, that they ignore everything else and focus all of their attention on the interaction (Novak, et al., 2000). Hoffman & Novak (1996) list increased learning, perceived behavioral control, an exploratory mindset, and positive subjective experiences as the outcomes of flow, and conclude that the ability to make consumers experience flow is online marketers' most important skill.

Aligning with Csikszentmihalyi's (1990) definition, Huizingh & Hoekstra (2003) list the elements of a flow experience as follows; it requires learning of skills, it includes concrete goals, it provides

feedback, it makes the user feel in control, it facilitates concentration, and it is distinct from the everyday world. From the conversion effectiveness point of view, user goals are a central part of the flow state. Mahnke et al. (2015) point out that these goals can be specific or broad, and that they are rarely static but that users switch goals and may form completely new ones during the interaction experience. Following from this, Mahnke et al. (2015) identify two strategies for enhancing website visitors' flow experiences: enabling users to maintain motivation toward their existing goal, and inspiring users to pursue new goals. In these efforts, information organization and optimization are of paramount importance (Mahnke, et al., 2015).

Several studies have discovered positive effects of flow online. For example, van Noort et al. (2012) confirmed that higher interactivity perceptions that lead to a more intense experience of flow result in more positive affective, cognitive, and behavioral responses toward the website and the brand. In another study, Huizingh & Hoekstra (2003) found the experience of flow on a website to correlate positively with attention, liking, and likelihood to return to the site. Also, flow has been shown to positively influence both exploratory online behavior and attitudes towards purchasing (Korzaan, 2003). Hsu, Chang, and Chen (2012) found that the experience of flow positively relates to three dimensions of online shopping behavior, i.e. continuance intention, purchase intention, and impulse buying. Richard & Chebat (2016) found a direct influence of flow on attitudes toward the website and the offering, as well as purchase intentions.

To achieve the beneficial outcomes listed above, the knowledge and work of web designers, developers, and other business units – especially marketing – should be combined in an effort to create a site that induces experiences of flow (Korzaan, 2003). Smith & Sivakumar (2004) conclude that website content needs to be configured and organized in a way that elicits trust and increases users' purchase intentions. Succeeding in this requires provision of useful interactive features, as described in the previous chapter. The interrelations between flow, its predictors, and its outcomes are abundant and for the most part difficult to measure. Despite this, several studies have succeeded in finding empirical evidence showing that such connections exist. Figure 2 presents a simplified version of Hoffman & Novak's (2009) conceptual model of flow with the additional division of interactivity into actual and perceived interactivity. For the purposes of this thesis, the simplified model only includes paths that have been shown by prior research to lead from interactivity to purchasing behavior.

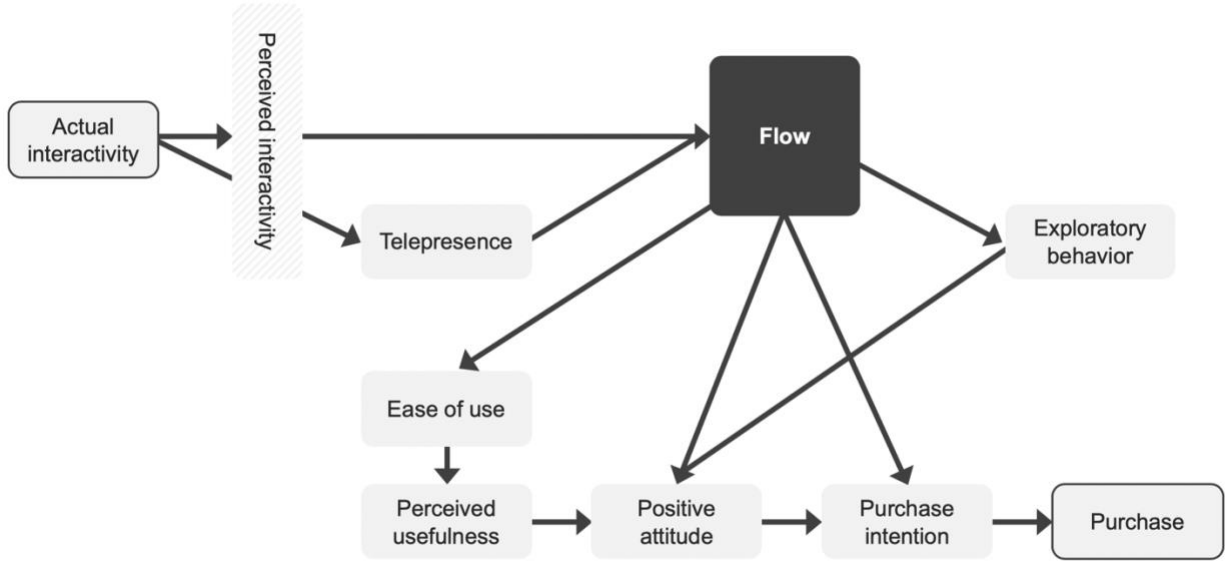

Figure 2. From interactivity to flow and purchase: A conceptual model of flow derived from multiple studies (Hoffman & Novak, 2009) (simplified, with the addition of perceived interactivity)

Based on Figure 2, it can be concluded that even when flow does not cause immediate actions that take the user toward conversion, it makes the user more likely to convert on the particular site, once he or she is far enough through the buyer's journey and ready to make a decision. As Bauer et al. (2002) point out, the positive associations between flow and behavioral outcomes do not imply that adding flow-inducing features will lead to for instance more conversions, but do indicate that such features are more likely to appear on sites with high conversion rates. Flow can also be unintentionally inhibited by the website's slow loading speed, link failures, open contact forms that require extensive cognitive resources, and ambiguity about the user's next steps in navigating the website (Rosen & Purinton, 2004). Overall, the flow state is something that brand owners should aim to foster on their websites, as its effects on users' attitudes and behavior are numerous.

2.3 Conversations with Bots

Following the review of online consumer behavior and the fundamentals of the interactive internet landscape, focus is now shifted towards human-computer interactions and the applications of computerized interfaces in service tasks online. Specifically, this chapter discusses what is known about bots that are used as an interactive feature for enhancing the website's user experience,

guiding consumers along the customer journey, and providing potential business benefits. Chapters 2.3.2 and 2.3.3 explore bot identity and tone of voice – the variable attributes of the empirical part – as they relate to the specific context of websites and conversational chatbots.

2.3.1 Chatbots

A natural next step from interactivity and flow is to consider the characteristics of how website users interact with the site. The field of human-computer interaction (HCI) is interested in interaction design regarding applications and systems that mediate communication between humans and computers (Sørum, et al., 2012). Such interactions come in physical and digital form, depending on the type of service robot application. As with websites and online customer experience in general, usability – the ease and effectiveness with which a user is capable of achieving specified goals – is a central concern in human-computer interaction (Sørum, et al., 2012). This review is limited to conversational chatbots, i.e. interactive service robots that are placed on corporate websites to help users achieve goals and to perform tasks that would otherwise require human resources.

The purpose of chatbots on websites is best illustrated with a comparison to a conventional brick & mortar store. In a physical setting, salespeople screen shoppers who enter the store for their intention to make a purchase. Experienced professionals can easily make a difference between 'window shoppers' and those who are ready to buy, which allows them to target their sales efforts accordingly (Moe, 2003). Conversational chatbots (and live chats) bring the element of personal service to websites that previously lacked such personalization and targeted service approach. In this virtual environment, it is the pages and content viewed and interactions performed by the user, which determine their type and purchase intention (Moe, 2003). Real-time interactivity and synchronized two-way communication of the bots fill the role of sales personnel in the online environment, helping companies build relationships with the users (Yoon, et al., 2008).

Conversational chatbots manifest Deighton & Grayson's (1995) prediction of a marketing communication future, where interactive technologies enable marketers to create dialogues that deepen relationships with their customers. Chatbots are by no means a new invention, dating back to ELIZA in the 1960s, but adoption of the technology is yet to peak, as increasing numbers of firms implement them (Holtgraves, et al., 2007). Much of the new rise of chatbots can be attributed

to the increase in vastly developed computing technology and the resulting change in consumer behavior: consumers have gotten used to communicating quickly, in short messages, and around the clock (Brandtzaeg & Følstad, 2017). Today's chatbots are decision aids that are used to free up the site visitor's limited cognitive resources (Häubl & Trifts, 2000). They provide an alternative to traditional customer service and help users perform specific tasks, in which immediacy and convenience are a priority (Brandtzaeg & Følstad, 2017). In doing so, chatbots highly reflect the three dimensions of interactivity; two-way communication, synchronicity, and active control (Liu & Shrum, 2002).

A chatting function enables high message quality (relevance to the user) and speed of response, making it an effective tool for enhancing interactivity perceptions and site effectiveness. However, as with other interactive features, merely adding a chatbot is not enough to achieve a big improvement. Most importantly, the conversation path and dialogue need to be related and personalized to the user's situation and current need. Understanding the situational factors is critical for marketers, because chat features can be extremely helpful to users who need assistance, but useless and even irritating to users who are not looking for support. (Song & Zinkham, 2008).

Chatbots are a form of interactive marketing, which Thorbjørnsen et al. (2002) define as "an iterative dialogue where individual consumers' needs and desires are uncovered, modified and satisfied to the degree possible". This very accurately matches the functionality and purpose of conversational chatbots. An important element of interactive marketing is that it enables personalization of the information, or content, to the user's specific needs, which enhances their sense of control (Thorbjørnsen, et al., 2002). Bots are indeed used to give the website user control over what information is presented and in what order, but at the same time, they require cognitive resources for managing the information flow (Ariely, 2000). This control over site content is critical. As Mollen & Wilson (2010) point out, if a website fails to be relevant and useful, it does not matter how stimulating the experience otherwise is: there will be no true engagement, which is a prerequisite for cognitive and affective commitment. With the control aspect, bots empower website users to influence how the relationship between them and the brand is formed (Rose, et al., 2012). It is thus clear that chatbots do more than merely add interactive functionality to a site. According to McMillan & Hwang (2002), website users expect interaction that resembles face-to-face personal selling, so brands need to invest in developing such dialogues with their customers.

This engagement opportunity must be brought to quickly moving users with speed and ease of controlling the interaction (McMillan & Hwang, 2002).

Chatbot design calls for deep understanding of the users' motivations. Brandtzaeg & Følstad (2017) note that achieving a high level of relevance can overcome the hurdle that people may not feel comfortable interacting with an unfamiliar technological feature. Whereas early adopters can be eager to use chatbots, less technologically oriented users may find them confusing or even intimidating. Productivity has been found as consumers' main motivation to use chatbots – at best, chatbots increase the ease, speed, and convenience of obtaining information and help. This driver springs from consumers' constant need to be productive and gain instant gratification. In addition to productivity, chatbot interactions also serve to fulfill users' entertainment and social needs, which suggests that conversations with bots may benefit from a touch of empathy and human warmth. It is even suggested, that successful chatbots should be built to perform the roles of a tool, a toy, and a friend. (Brandtzaeg & Følstad, 2017).

2.3.2 Bot Identity

Besides increasing users' productivity and answering to some of their entertainment and social needs, chatbots act as a vehicle of branding. As discussed earlier, a chatbot on the website is largely equivalent to a company salesperson in a physical store, so the importance of the bot's identity and its human and non-human characteristics should not be overlooked. This research centers on two ways in which companies can customize a bot's identity: by giving the bot a name and an avatar.

Bot identity is a relevant concern to the design of conversational bots because, as Aaker (1997) points out, an asymmetric relationship exists between how the personality of brands vs. humans is evaluated. In this case, the concepts of anthropomorphism, machinization, and humanization can be used to explain the potential differences between the effect of bot identity on the conversation. As one of the most prominent aspects of HCI, anthropomorphism refers to humans' inherent tendency to imbue objects with human-like characteristics, motivations, intentions, and emotions, which influences interactions with the object (Epley, et al., 2007). Machinization, on the other hand, describes the act of purposefully making a service robot or virtual assistant, e.g. a conversational chatbot, more robot-like to remind humans that they are interacting with a machine

(Mende, et al., 2019). Finally, humanization of the technology achieves the opposite by emphasizing the assistant's human qualities (Schroll, et al., 2018).

Anthropomorphism, especially as it relates to service robots, receives an increasing amount of attention as human-computer interaction becomes more common in consumers' everyday lives. Considering the current thesis, one interesting avenue in this domain are studies related to the uncanny valley, which Mori et al. (2012) describe as a "a nonlinear effect of a robot's human-like appearance on how people respond to it". Specifically, the uncanny valley reveals how "a robot that approaches humanness but fails to fully attain it triggers discomfort because of the mismatch between the anticipated human qualities of the robot and its actually imperfect, nonhuman qualities" (Mori, et al., 2012). Other researchers, including Mathur & Reichling (2016), concur that humans find robotic faces more likeable as they are given some human-like characteristic, but that nearly human-like machines are found unlikeable. In other words, consumers seem most comfortable dealing with robots that can easily be identified as machines, or at the other end of the spectrum, with robots that very accurately resemble humans and have human-like capabilities, as well (Mathur & Reichling, 2016).

This phenomenon springs from the theory of technology-related human discomfort, which suggests that service robots may elicit a threat to human identity (Mende, et al., 2019). When facing such a threat, humans may resort to compensatory consumption, which is described by Mandel et al. (2017) as consumption motivated by a desire to reduce threatening incongruities between one's ideal and perceived self. According to Mandel et al. (2017) such defensive reactions may encourage humans to consume products or services rich in symbolic value, as those will support their sense of control in the troubling situation. From a business perspective, this can provide profitable opportunities to up-sell more easily, for example when consumers face a choice between a base and a premium product (Mandel, et al., 2017). Mende et al. (2019) found that humanized service robots resulted in more compensatory responses from customers than machinized ones, which supports the presence of the uncanny valley. Additionally, Aggarwal & McGill (2012) note that consumers' reactions to brands are different, depending on the relationship to the brand – whether the brand is considered a 'partner' or a 'servant' – and whether the brand is anthropomorphized or objectivized.

Using avatars, i.e. pictorial representations of the service person or chatbot, is a simple method of either machinizing or humanizing the bot and adding depth to the interaction, and can result in positive outcomes (Holzwarth, et al., 2006). Holzwarth et al. (2006) suggest that the mere presence of an avatar in human-computer interaction increases website effectiveness by making the user feel like they are having a reciprocal conversation. The importance of the avatar in persuading a user is even lifted above that of the actual content of the dialogue. Furthermore, Holzwarth et al. (2006) conclude that an attractive avatar increases persuasion effectiveness regardless of the level of involvement in the particular interaction, whereas a more expert avatar only increases effectiveness when involvement is high. The attractiveness-expert dimension, as well as gender questions are outside the scope of this study.

Several views support the humanization of service agents. One of these is Hausman & Siekpe's (2009) observation that human factors increase users' perceptions of website usefulness and entertainment value, which are key antecedents of flow, and therefore linked to the intentions of returning to the site and purchasing. Also, it has been shown that human warmth and sociability affect consumers' product evaluations and emotional attachment by creating perceptions of human presence with the use of e.g. pictures and personalized greetings (Schroll, et al., 2018). Perceptions of social presence have been shown to result in higher trust and intention to purchase from a website (Hassanein & Head, 2007). The value of increased trust should be stressed, because the internet's intangibility and relatively low control over transactions amplify consumers' risk perceptions in the environment (Hassanein & Head, 2007). This is an especially prominent issue when a user is required to submit personal information, which is usually the case with chatbots.

As Brandtzaeg & Følstad (2017) conclude, consumers use chatbots primarily for their potential productivity gains, but social motivations are also an important aspect of the interaction. Thus, providing an opportunity for emotional engagement with a chatbot may be an important aspect contributing to the chatbot's success (Brandtzaeg & Følstad, 2017). However, it is not known whether social presence enhances users' productivity gains, which is the primary objective of chatbots. Although not measured in the current study, based on the mentioned findings, it can be expected that a humanized bot will be more fulfilling from the social motivations perspective, but the opposite may well be true for productivity gains.

No prior research is found comparing the effects of the brand vs. a human as the service agent in the case of a conversational chatbot. From the firm's perspective, it seems desirable to have the bot reflect the brand's identity and personality traits to strengthen a branded look and feel. On the other hand, giving the bot a human face likens it more to a real-life salesperson and increases the warmth and sociability of the interaction, but may risk the bot falling into uncanny valley. As there is no knowledge of how these two alternatives (brand – human) compare in a similar setting, they are chosen as one of two variable attribute pairs for the experiments of the thesis. As a conclusion to this section, the first hypothesis is formulated as follows.

> ***H1:*** *Human bot identity is associated with a higher likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue than branded bot identity.*

Underlying the hypothesis is the assumption that social presence induced by the human face will be more effective in eliciting interactive responses and engagement from the user. It is hypothesized that users who encounter the humanized bot experience a higher level of personalization and individual attention and are thus more inclined to engage in dialogue and form a trust that leads them toward conversion. They may also feel more in control over the outcome of the conversation than when chatting with a faceless and distant brand. In other words, it is expected that conversations with humanized bots will feel more natural and therefore be more effective.

2.3.3 Tone of Voice

Like the identity of the bot, the service agent's tone of voice influences the nature of the interaction and potentially also consumers' affective and behavioral outcomes. In the marketing context, tone of voice, or TOV, is a commonly referred concept when discussing a brand's online presence in channels like the corporate website and third-party social media platforms, but it extends also to other means of marketing communications. Fundamentally, tone of voice encapsulates the language style in which a company communicates and is developed to convey the brand's personality, values, and essence to target audiences, either in written or spoken format (Delin, 2005). Depending on how the company wants to project the brand, TOV can be defined as for example reliable and professional, or in another case, fun and friendly (Delin, 2005).

While tone of voice is only one of a company's myriad ways to convey the brand, it is a very apparent one and achieves critical importance in direct conversations on the website. It is key to

understand that tone of voice is about more than just the words that a company chooses to use – a company's TOV tells its customers how the company feels about the message, thus influencing how the customers will feel about it, too (Moran, 2016). In addition, for example the use of emojis (Gretry, et al., 2017) as well as the speaker's avatar (Park & Lee, 2013) shape tone of voice in digital brand communications. A distinct tone of voice can be established for example with the help of Moran's (2016) four dimensions of TOV, which can be used to position the tone along the dimensions of funny–serious, formal–casual, respectful–irreverent, and enthusiastic–matter-of-fact. To further define the boundaries of the thesis, these four dimensions are simplified into one pair, in which serious, formal, respectful, and matter-of-fact are given the common nominator 'formal' and funny, casual, irreverent, and enthusiastic are placed under the term 'casual'. The division is not perfect but provides enough accuracy for the purposes of the thesis.

This division of TOV into formal and casual has received attention in prior studies. For example, Kelleher (2009), who describes conversational human voice as an engaging and natural style of communication, studied its impact on trust, satisfaction, and commitment in corporate blogs. More recently, Gretry et al. (2017) examined the opportunities and risks involved in communicating casually on companies' social media pages. Both studies had similar findings, pointing to the fact that customers who interact with the brand frequently (Kelleher, 2009) and are familiar with the brand (Gretry, et al., 2017) find a casual or informal tone more acceptable and even expect that from the brand, whereas the trust of customers who haven't formed a relationship with the brand may be damaged due to informality. Because social media and chatbots on websites are both representative of two-way online communication between brands and consumers, it can be safely assumed that these findings are applicable to the current research (Gretry, et al., 2017).

As mentioned, the use of emoji, i.e. graphical depictions of facial expressions and non-human symbols and objects, influences the formality of a conversationalist's tone of voice in digital communications (Gretry, et al., 2017). Li et al. (2019) find that when service employees use emoji, customers perceive them as warmer but less competent than those who do not use emoji. They also find that the effect is moderated by the customer's relationship norm, that is, communal-oriented customers (service person is expected to act like a 'friend') are likely to infer higher warmth from the use of emoji, and exchange-oriented (more calculative) customers will perceive lower competence (Li, et al., 2019). Therefore, no unequivocal conclusions have been made about

whether the use of emoji in service encounters has a positive or negative effect on business outcomes. Perceptions of warmth relate to friendliness and helpfulness, whereas formality is interpreted as competence and skill (Li, et al., 2019). In the end, much depends on the type of brand and relationship that the company strives to build with its customers, which means that in one instance, emoji can elicit favorable attitudes and behavior, and in another, they may completely put off customers (Li, et al., 2019).

SanJosé-Cabezudo et al. (2009) found that websites that presented brand-related content in a serious format (formal tone) were perceived as more efficient, which resulted in more positive attitudes and higher purchase intention. In contrast, intuition agrees with Delin (2005), who hypothesizes that conversational linguistic features (casual tone) will increase consumers' perceptions of social proximity, the brand's human qualities, warmth, and approachability. The use of a human tone is based on the notion that consumers can relate to brands as if they were other people participating in the conversation (Fournier, 1998). The motivation for using such tone springs from the possibility to bring the consumer and the brand closer to each other, which should lead to positive attitudes toward the brand (Sela, et al., 2012). In another research, Barcelos et al. (2018) infuse the discussion by including consumer goal and situational involvement in the equation. They conclude that brands should use a human voice (casual tone) when their offerings are mainly hedonic and customer involvement is low (Barcelos, et al., 2018). In contrast, high situational involvement and risk call for a more distant communication style, which manifests as corporate voice (formal tone) (Barcelos, et al., 2018).

According to Delin (2005), a frequent case for defining TOV is when a company wishes to decrease the use of unnecessary jargon. On the other hand, replacing technical and perhaps more difficult terms with over-simple words may in some cases be found by consumers as patronizing (Delin, 2005). A mismatch between tone of voice and consumers' expectations towards the brand may result in negative reactions, because the way a brand addresses people is a direct clue of how it 'thinks' about them – for instance, a childish tone will be taken as a signal that the brand regards the customers as immature (Delin, 2005). Similarly, misalignment of context and TOV easily results in confusion and undesired outcomes from the company's perspective (Delin, 2005) – for example, informal language in regulatory statements may jeopardize a firm's credibility. Sela et al. (2012) agree and state that optimal brand communication depends on the nature of the

relationship that the consumer expects to have with the brand: non-customers may perceive implied closeness negatively, but for someone who interacts with the brand frequently, the lack of social presence and closeness in the tone can have a detrimental effect on attitudes.

Again, users' motivations for chatting with a bot are central. As mentioned, social and even emotional engagement is relevant, as it may support the success of the chatbot in achieving desired outcomes (Brandtzaeg & Følstad, 2017). At the same time, productivity gains are the most important reason for having conversations with bots (Brandtzaeg & Følstad, 2017). The possible connections between formal or casual tone and the fulfillment of productivity gains or social motivations are unknown. While intuition may suggest that formal tone would be more effective from the productivity perspective (more direct and to-the-point) and that casual tone conveys more human warmth and sociability, the associations are likely not that straightforward, as situational factors like familiarity with the brand will highly likely influence the outcome. Even if these connections were known, comparing the two tonality variations side by side is likely to provide new information about user preferences regarding conversations with bots. Based on this discussion, tone of voice (formal – casual) is chosen as the second variable attribute pair for the experiments of this thesis. The second hypothesis of the thesis states as follows.

> ***H2:*** *Casual tone of voice is associated with a higher likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue than formal tone of voice.*

Similar to H1, this hypothesis is based on the assumption that a casual tone will be experienced more approachable and human, which is expected to encourage users to engage and proceed in the dialogue. Even though user preferences regarding tone of voice are likely to depend on the user's own language style and expectations toward the brand in question, it is expected that the more close, personalized and mindful casual tone of voice will be more effective in eliciting positive responses. Some users may experience casual tone of voice as too familiar or colloquial, but a greater risk is assumed to lie in the bluntness of the formal tone, which may significantly increase the distance experienced by users as well as have a negative effect on their mood compared to the casual tone.

2.4 Framework & Hypotheses

Based on the thorough review of existing knowledge on the discussed topics, a theoretical framework is now formulated as the foundation for the empirical part, analysis of results, and discussion. Figure 3 illustrates this framework and provides a condensed overview of the thesis context by summarizing the most profound elements from the literature review.

A set of key theories characterize the context of online consumer behavior, including the elaboration likelihood model (ELM), the theories of reasoned action (TRA) and planned behavior (TPB), consumers' need for cognition (NFC), and the technology acceptance model (TAM). On top of these theories, the online customer experience (CX) is formed as an accumulation of a consumer's encounters with a brand in various touchpoints throughout the stages of the customer journey. Interactivity is the main differentiator between websites and traditional media. Actual interactivity (interactive features of the medium) and the consumer's perceived interactivity shape consumer-firm interactions and induce telepresence and experiences of flow. These constructs affect the nature of the interaction, and lead to cognitive, affective, and behavioral outcomes towards the website, the brand, and the consumer-brand relationship.

After establishing the solid foundation described above, specific aspects of human-computer interaction and chatbots were discussed. Bots were found to answer consumers' productivity needs and social motivations. Conversations with chatbots are shaped by several dimensions, including the consumer's relationship and familiarity with the brand. The degree to which the service agent is machinized (made to appear machine-like) or humanized (given human-like qualities) influences consumers' reactions: depending on the setting, bots can elicit defensive or favorable reactions. A chatbot's identity was considered in terms of its name and avatar, and tone of voice was identified as another key variable in the equation. Thus, bot identity (brand – human) and tone of voice (formal – casual) were chosen as the tested variables for the experiments of the thesis.

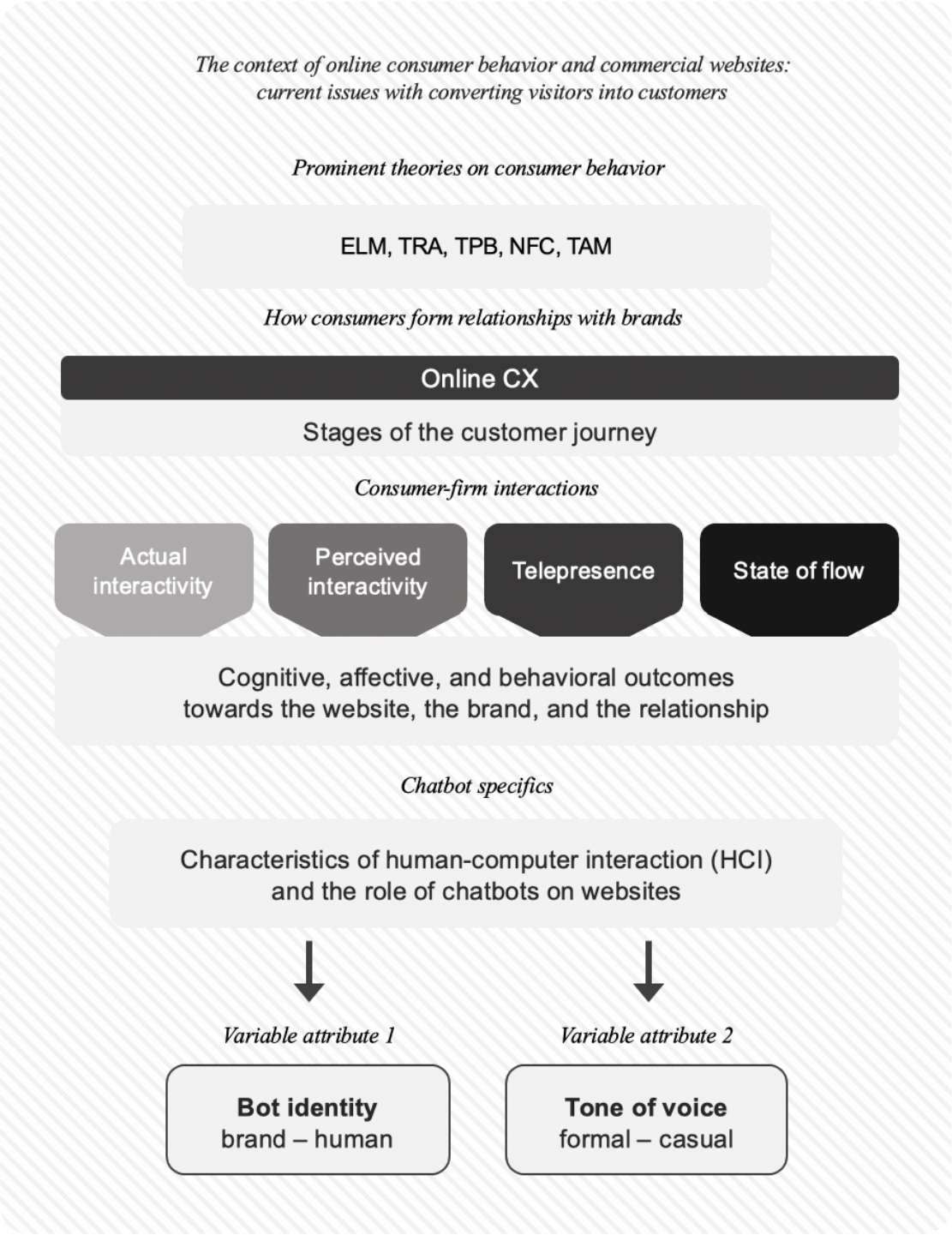

Figure 3. Theoretical framework and the chosen variable attributes.

Based on the literature review, a set of hypotheses is now formulated to guide the experiments and the analysis. In essence, the experiments seek to discover whether a branded or human bot identity is more effective. As for tone of voice, the performance of formal and casual bot variants is predicted and compared. Effectiveness is measured as ratios between the number of how many times a bot was triggered, how many conversations were initiated by the website visitor, and in how many instances the visitor converted into a lead, meaning that they submitted their information or performed another type of targeted outcome.

Hypotheses 1 and 2 consider the effectiveness of bot identity and tone of voice:

> ***H1:*** *Human bot identity is associated with a higher likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue than branded bot identity.*
>
> ***H2:*** *Casual tone of voice is associated with a higher likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue than formal tone of voice.*

Hypotheses 3 and 4 consider the moderating effects between the variables and conversions:

> ***H3:*** *The relationship between bot identity and conversion rate is moderated by tone of voice, such that formal TOV increases the likelihood of conversion for branded bot identity.*
>
> ***H4:*** *The relationship between bot identity and conversion rate is moderated by tone of voice, such that casual TOV increases the likelihood of conversion for human bot identity.*

Finally, hypotheses 5 and 6 anticipate the absolute effectiveness of variable combinations:

> ***H5:*** *The combination of human bot identity and casual tone of voice is associated with the highest likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue.*
>
> ***H6:*** *The combination of human bot identity and formal tone of voice is associated with the lowest likelihood of* ***(a)*** *conversion and* ***(b)*** *engagement in dialogue.*

The reasoning behind H3 and H4 follows directly from the argumentation regarding H1 and H2. Based on the theoretical review, the variables form two natural pairs, i.e. branded bot identity & formal tone of voice, and humanized bot identity & casual tone of voice. The former pair is characterized by productivity, distance, and neutrality, whereas the latter pair is more associated with sociability, closeness, and warmth. Therefore, it is expected that formal TOV moderates the

relationship between branded bot identity and conversion (H3) and that casual TOV moderates the relationship between human bot identity and conversion (H4).

Hypotheses 5 and 6 take a stance on the absolute effectiveness of bot variable combinations. Because human identity (H1) and casual tone of voice (H2) are expected to perform more effectively than their counterparts, and because of the moderating effect (H4), it follows that the combination of human bot identity and casual TOV is expected to perform the most effectively of all four combinations.

Finally, the combination of human bot identity and formal TOV is expected to perform the least effectively due to the mismatch between sociability conveyed by the human identity and distance conveyed by the formal tone of voice. A similar mismatch exists in the combination of branded identity and casual TOV, but the influence is assumed to be less significant, because, based on their experience of real-life conversations, users are likely to detect the mismatch more easily when interacting with a bot that has a human identity. Also, it is commonplace that a brand uses casual tone in other marketing communications. Furthermore, in the case of human identity coupled with formal TOV, performance may be negatively impacted by the uncanny valley effect, as the human face clashes with a machine-like blunt tone of voice.

Despite this reasoning, the results of the experiments may not be as straightforward as described in the hypotheses. Most importantly, it is expected that the brand in question has a considerable effect on the results, because for some, for example a casual tone of voice may be far from the brand's typical communication style. Also, due to limitations, several other factors that are likely to affect the results are left outside the scope of this research, including the gender and appearance of the humanized bot.

3 Methods and Data

This chapter proceeds from the theoretical framework to the empirical part by describing the current study in terms of research design and methodological approach. Choices and processes related to data collection and data analysis are disclosed to provide a transparent lens through which to evaluate the findings.

3.1 Research Approach

As discussed early on, this research springs from the identified problem of low conversion rates on corporate websites, which indicate that companies fail to engage potential customers in a two-way dialogue that could improve customer experience and increase revenues. Following from this, decision makers face the choice of whether and how to better facilitate those conversations on the website. The thesis employs a conclusive research design (Malhotra, et al., 2017) to test stated hypotheses related to the chosen variable attributes: bot identity and tone of voice.

The structured design consists of a set of field experiments (Malhotra, et al., 2017) run on live corporate websites. These experiments are specifically designed to measure the effect of bot identity and tone of voice on the conversational bots' effectiveness in engaging users in a dialogue and nudging them forward on the buyer's journey toward conversion. In essence, the experiments measure the frequency of events related to interactions between users and websites in order to present opportunities for statistical analysis that will further reveal patterns in consumer behavior. Inferences of causality between variable attributes and certain events are of interest, even though conclusive statements about causality cannot be made.

The research relies on quantitative observation as its primary method, which is a common approach in descriptive research that aims to collect information about behavioral patterns that can help form an understanding of a phenomenon (Malhotra, et al., 2017). More specifically, the experiments are a case of structured observation, in which the observed behaviors are defined, i.e. engagement in dialogue and conversion (Figure 4) (Malhotra, et al., 2017). Moreover, the observation can be categorized as electronic (the conversational chatbot records the behavior), disguised (participants are unaware of being observed), and natural (behavior is observed as it occurs in the real environment and under non-artificial circumstances) (Malhotra, et al., 2017). These methodological specifications are employed to diminish the effects of external factors, achieve as

high level of data accuracy as possible, and eliminate observation and reporting biases (Malhotra, et al., 2017). Extraneous variables, incl. history, maturation, testing effects, instrumentation and selection bias are controlled with the true experimental design that is based on randomization. As a result, there is no significant threat to the internal validity of the experiments. The primary weakness countering this list of positives is the fact that the chosen methodology does not support inferences about motives or attitudes. (Malhotra, et al., 2017)

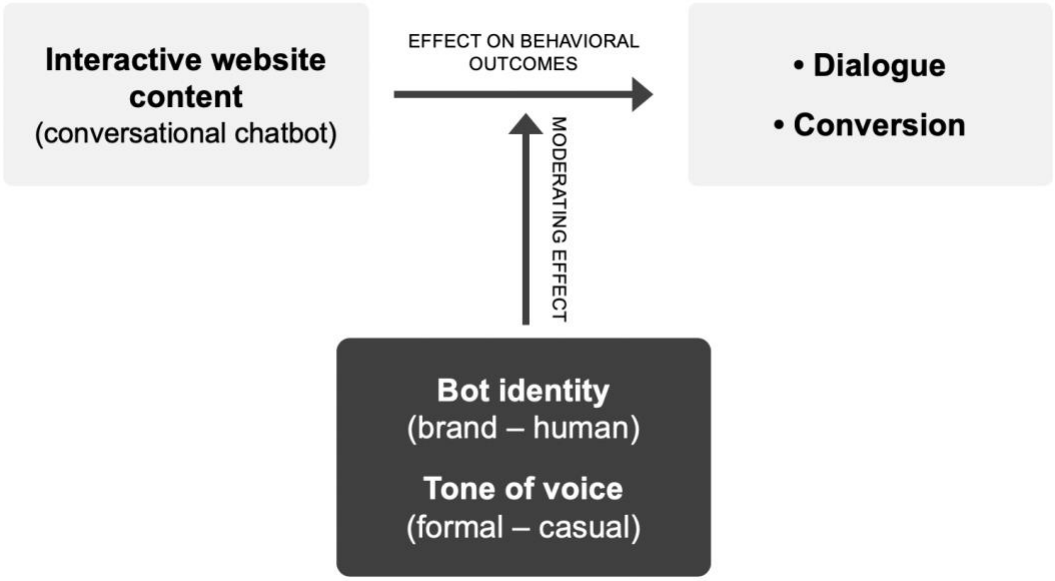

Figure 4. Simplified illustration of the research design.

3.2 Data Collection

Experiments were run on three corporate websites. Given the limitations of the research, participating companies were chosen from a pool of firms that had already implemented the bot technology on their website. This enabled agile experimentation to meet the time restrictions of the research project. Experiment details, including timing, placement of the test bot, and structure of the bot conversation, were negotiated together with participant companies (hereafter: C_1, C_2, and C_3). The context and target audiences of the websites are B2B for C_1 and B2C for C_2 and C_3.

A total of 5 experiments were run (two on the websites of C_1 and C_2, and one on the website of C_3). Each experiment comprised of one interactive conversational bot embedded in the chosen web

page. Each bot included four variants, according to the variable attributes, i.e. combinations of brand (variable: bot identity) & formal (variable: tone of voice), brand & casual, human & formal, and human & casual. These variants are hereafter denoted as B_1, B_2, B_3, and B_4, respectively. For B_1 and B_2, the company logo or another visual brand element was used as the icon or avatar of the bot. B_3 and B_4 included an image of a human, either a real employee of the company (C_1), or a stock photo $C_{2\text{-}3}$). For B_1 and B_3, the bot's language was neutral and to-the-point, not showing emotion or addressing the visitor in any special way. In contrast, for B_2 and B_4, the language was more conversational and included positive emotional cues (happiness, excitement) as well as addressed the visitor in a more personalized manner.

For consistency, the specific tone of voice was carried over to both the bot's part of the dialogue and the visitor's response options. Each variant of a bot within an experiment had the same conversation structure, only bot identity and tone of voice were altered. Example images of bot variants are presented in Appendix 1. Also, the conversational structure of two experiment bots ($E1_a$ and $E1_b$) is outlined in Appendices 2 and 3 to provide examples of what visitors faced on the websites.

Table 1. Summary of experiment specifications.

Experiment	Company	Context	Published	Placement	Conversion
$E1_a$	C_1	B2B	7 Jan – 17 Feb 2020	Front page (early stage: general landing page)	Information submit
$E1_b$	C_1	B2B	14 Jan – 28 Feb 2020	Contact page (late stage: point of conversion)	Information submit
$E2_a$	C_2	B2C	14 Jan – 6 Mar 2020	Front page (early stage: general landing page)	Information submit
$E2_b$	C_2	B2C	14 Jan – 6 Mar 2020	Contact page (late stage: point of conversion)	Information submit
E3	C_3	B2C	16 Jan – 4 Feb 2020	Pricing page (mid stage: before main conversion)	Internal link click

The general structure of the test bots was designed by the researcher with support from experts in the field of conversational chatbots. Bots were reviewed and accepted by representatives of $C_{1\text{-}3}$

before the experiments were published. Each experiment was run as a 2-by-2 multivariate test, in which variants of the test bot were shown to visitors of the website at random. This approach was employed to collect a near-equal amount of unbiased exposure to each bot variant. Due to natural variance, the total number of exposures varies between the variants. Experiments were published and unpublished on the participating websites by the researcher or by the participating companies and their digital partners.

Table 1 presents a summary of the experiment specifications, where experiments are denoted $E1_a$ and $E1_b$ (C_1), $E2_a$ and $E2_b$ (C_2), and E3 (C_3). The table includes a description of the experiment's placement on the website (in relation to the main conversion point of the site) and the type of conversion. For *Information submit*, a conversion was recorded when the visitor submitted personal contact information (name & email address and/or phone number), and for *Internal link click*, a conversion was defined as a click of a link at the end of the bot dialogue, redirecting the visitor to a page where they could perform the main conversion. For simplicity, in the analysis part, the number of conversions (as defined here) is equal to the number of leads generated by the bot variant, even though conversions recorded in E3 did not produce identifiable leads.

3.3 Data Analysis

The field experiments were run until a reasonable sample size was achieved for each experiment. The accumulation of data points was observed throughout the experiments, which allowed confidently to determine a point of saturation, i.e. after which no major developments in the distribution were to be expected. Descriptive statistics of each experiment's sample are presented in Chapter 4 together with the results of the statistical analyses.

After completing and unpublishing the experiments, data was organized into spreadsheets, where each row represented a website visitor. This information was complemented with binary data about which bot variant the visitor had encountered, whether they had engaged in a dialogue with the bot, and whether they had completed a conversion. The data was pulled directly from the analytics dashboard of the chatbot tool used for running the experiments.

Logistic regression was used to test hypotheses related to the comparative effectiveness of bot identity and tone of voice (H1 and H2) as well as the moderating effect of tone of voice (H3 and H4). Logistic regression, or a binary logit model, suits the purpose of the thesis, as it can be used

to predict the probability of a binary event (Malhotra, et al., 2017). The model predicts the probability of conversion to lead and engagement in dialogue as bot identity and tone of voice are altered between brand and human, and formal and casual, respectively (Malhotra, et al., 2017).

The regression model was run with *conversion to lead* as the binary dependent variable (H1a), and the same procedure was then repeated with *engagement in dialogue* as the dependent variable (H1b). In both instances, the binary independent variables were bot identity and tone of voice (branded identity and formal tone of voice were given the value of 0, and human identity and casual tone of voice were appointed the value of 1). These analyses were run to test for main effects between the independent bot variables and the dependent outcome variables.

The next step in the analysis was to test for interaction effects, i.e. to discover whether the tone of voice variable moderates the relationship between the predictor variable (bot identity) and the outcome variable (conversion to lead, engagement in dialogue). For these analyses, an interaction variable (bot identity*tone of voice) was included as an independent variable in the model. Like in the previous stage, the model was run separately for both *conversion to lead* and *engagement in dialogue* as the dependent outcome variables.

Results of the tests for main and interaction effects were graphed into multiple line charts, where the y-axis represents the probability of the outcome variable, the x-axis includes two categories of the predictor variable (bot identity), and the fitted lines (blue for formal and red for casual) represent the moderator (tone of voice). Finally, the factorial design aspect (Malhotra, et al., 2017) of the research is evident in H5 and H6, which were tested to discover the highest and lowest performing attribute combinations measured by the probability of the outcome variables. Rejection of the null hypotheses for H5 and H6 could be determined by examining the fitted regression lines produced in the tests described above.

4 Findings

This chapter presents the descriptive statistics and results of the regression analyses for each experiment by study. Level of statistical significance is set at $\alpha = 0.05$, which is common practice in marketing research (Malhotra, et al., 2017). Also, additional analysis that spans all three studies is described at the end of the chapter. Here, findings from each experiment are examined to determine whether generalized findings emerge from the data.

Study 1

Study 1 was designed to explore how bot identity and tone of voice influence conversions and engagement in bot dialogue at two different stages of the website experience. Experiments 1a and 1b were conducted on the website of a Finnish B2B technology company. The website's overall tone of voice (both verbal and visual) can be characterized as more casual than formal. The visual style of the website is playful and colorful with lots of dynamic illustrations. In these experiments, the branded bot identity variants used a visual brand element that refers to a dialogue, and humanized bot variants used images of two employees who are in key roles in the company and likely to have been recognized by some of the participants. The TOV variants were designed as clearly distinct versions: the casual variant was strongly characterized by conversational language and emotional cues, and parts of the dialogue were adjusted based on the visitor's replies, whereas the formal variant communicated in a machine-like neutral style.

Experiment 1a

E1a was run in the very first view of the website's home page, where a large majority of the total site traffic encountered it as the first thing on the site (see examples in Appendix 1). This placement was chosen to ensure a large sample size with the tradeoff of not yielding a great amount of leads. The conversation began with the overall qualification of the visitor based on what they were looking for on the website. Based on the visitor's first answer, the dialogue continued to one of five paths, which included multiple questions and some transitions between different paths. One conversation path was designed to end the discussion without moving to the collection of personal information, but others always ended with the possibility of conversion (see Appendix 2 for the outline of the conversation).

Table 2 includes descriptive statistics of how many times each bot variant was triggered (the visitor saw or had an opportunity to see the bot on the page), how many conversations were initiated by the visitor by clicking on an answer option, and how many leads were generated (visitor completed the defined conversion) for E1a. A similar table is presented for each of the remaining experiments.

Table 2. Sample and unit distribution in Experiment 1a.

Bot variant	Triggers	Discussions	Leads
B1 (brand–formal)	2965	164	4
B2 (brand–casual)	2929	174	9
B3 (human–formal)	2900	153	5
B4 (human–casual)	2891	161	14
Total	11685	652	32

The logistic regression does not reveal statistically significant main effects for either outcome variable in terms of bot identity, so there is no support for H1a or H1b. However, a significant main effect is found to support H2a. Predicted values point that a bot with casual tone of voice increases the likelihood of conversion to lead by 95% (B = .948, p = .016) compared to a bot with formal tone of voice. The result is not carried over to the outcome variable engagement in dialogue, meaning that H2b is not supported. Furthermore, no statistically significant interaction effects are found for either outcome variable, leading to the acceptance of the null hypotheses for H3 and H4.

Test results presented in Figures 5 & 6 show that, regarding H5, the combinations human–casual (conversion to lead) and brand–casual (engagement in dialogue) are predicted to perform the highest. These results support H5a but not H5b. Conversely for H6, the combinations brand–formal (conversion to lead) and human–formal (engagement in dialogue) performed lowest, which supports H6b but not H6a. Thus, the statistically significant findings from E1a are that casual tone of voice increases the likelihood of conversion to lead compared to formal tone of voice, that the combination of human–casual performs best for the outcome conversion to lead, and that human–formal performs lowest for engagement in dialogue. In addition to these results, there is indication that casual TOV is more effective than formal TOV in each case, but a similar conclusion cannot be made about either brand or human as the bot identity.

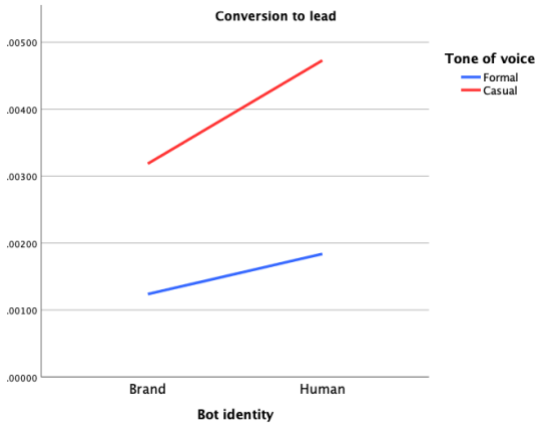

Figure 5. Predicted values: conversion to lead in E1a.

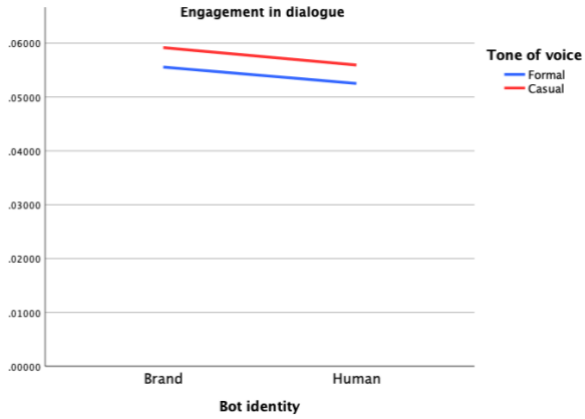

Figure 6. Predicted values: engagement in dialogue in E1a.

Experiment 1b

In the second experiment of Study 1, the test bots were placed further along the customer journey on a sub-page, whose main purpose is to allow visitors to send a contact request to the firm. Following from the placement, the conversation design was very straightforward in order to make converting as easy as possible. The dialogue started with one specifying question that mapped the visitor's interests and proceeded immediately to collecting the visitor's contact information (see Appendix 3 for an outline of the conversation). Table 3 presents the descriptive statistics for E1b.

Table 3. Sample and unit distribution in Experiment 1b.

Bot variant	**Triggers**	**Discussions**	**Leads**
B1 (brand–formal)	167	14	1
B2 (brand–casual)	197	8	2
B3 (human–formal)	158	10	5
B4 (human–casual)	141	3	2
Total	663	35	10

Again, no statistically significant results are found to support H1a or H1b, meaning that bot identity cannot be confidently extracted as a variable affecting either conversion to lead or engagement in dialogue. Also, neither H2a nor H2b receive support from the data. However, contradicting with

H2b, a significant result is found for the outcome variable engagement in dialogue. Here, casual TOV is predicted to perform at a lower rate than formal TOV (B = -.892, p = .017). This unexpected result is illustrated in Figure 8.

Tests for interaction effects do not reveal statistically significant results, leading to the acceptance of the null hypotheses for H3 and H4. Contrary to E1a, Figures 7 & 8 point to the trend that formal tone of voice is more effective than casual TOV for each combination and outcome variable. Due to this, neither H5 nor H6 is supported.

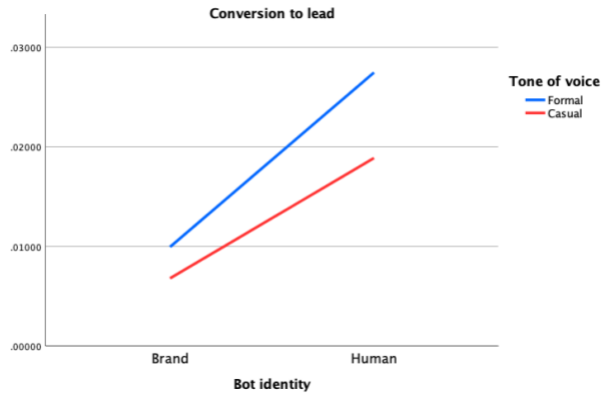

Figure 7. Predicted values: conversion to lead in E1b.

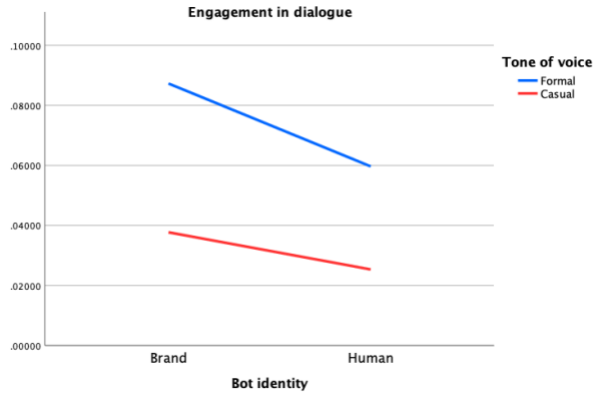

Figure 8. Predicted values: engagement in dialogue in E1b.

Experiments 1a & 1b

Finally, data from E1a and E1b were pooled in order to test for study-wide associations. The logit model does not reveal conclusive findings. Only H2a is supported by a marginally significant result indicating that casual tone of voice is more effective than formal TOV in driving conversions (B = .596, p = .065). Both datasets taken together, the combination human–casual is predicted the highest likelihood of conversion, supporting H5a. Also, H6b is supported, as the combination human–formal is predicted to receive the lowest values for engagement in dialogue. However, for engagement in dialogue, differences between bot identity and tone of voice variants are practically non-existent. These results can be seen from Figures 9 & 10. The lack of consistent findings was to be expected based on the difference in results for the models run separately for E1a and E1b.

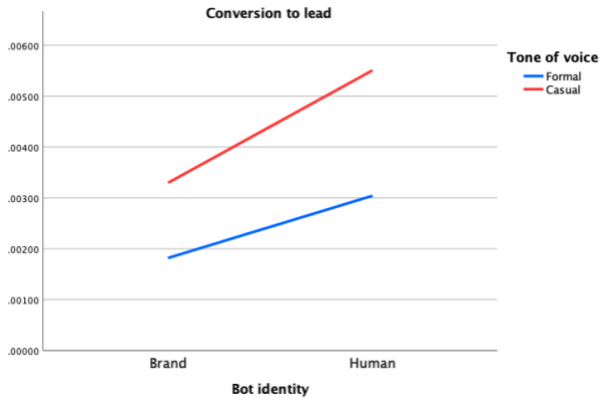

Figure 9. Predicted values: conversion to lead in E1a+b.

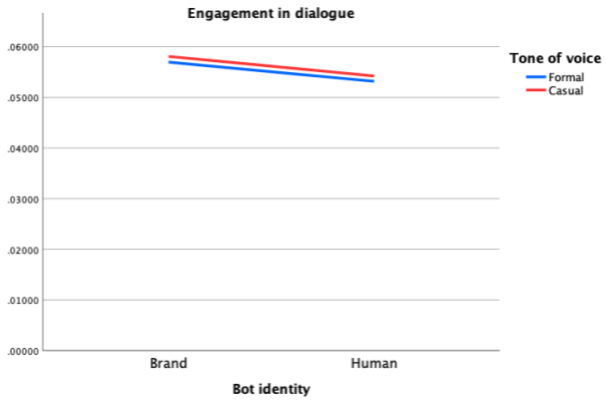

Figure 10. Predicted values: engagement in dialogue in E1a+b.

Study 2

Study 2 involved the website of a Finnish energy company. This study followed a similar design as Study 1 in that the experiments were placed on the front page and on a sub-page further along the buyer's journey. In terms of TOV, the consumer-facing website is characterized by neutral textual content with some conversational aspects rather than being fully formal. Imagery on the site is focused on humans and nature. Overall, the brand conveys an approachable impression on the website. A visual brand icon and a stock photo of a smiling Scandinavian-looking woman were used for the bot identity variants. The icon matched the airiness of the website's visual appearance, and the stock photo was chosen based on its fit with other human images on the site, as well as the natural feel of the brand. The TOV variants were distinctly different in terms of the use of conversational expressions, emotional reactions and emoji as conversational elements.

Experiment 2a

Similar to E1a, Experiment 2a was placed on the front page of the website, although below 'the fold', meaning that visitors had to scroll down to encounter the bot. The conversation was designed to first map the user's purpose for visiting the website. Alternatives included bidding for a new energy contract and finding more information about the energy that the company provides. The dialogue then continued to specifying questions about for instance the visitor's household size and current energy contract to add valuable information that could be linked to the possible lead. After

these questions, the visitor could choose to send a contact request by submitting their information, at which point a lead would be generated. Table 4 presents the descriptive statistics for E2a.

Table 4. Sample and unit distribution in Experiment 2a.

Bot variant	Triggers	Discussions	Leads
B1 (brand–formal)	4540	99	13
B2 (brand–casual)	4551	102	13
B3 (human–formal)	4448	90	14
B4 (human–casual)	4557	81	6
Total	18096	372	46

The logit models run with the dataset do not reveal conclusive main effects related to bot identity or tone of voice. Therefore, no support is found for H1 or H2. Also, results for the tests of H3 and H4 do not result in statistically significant findings, i.e. no moderating effects emerge. Finally, Figures 11 & 12 show that the combination of brand–formal is predicted to perform highest for both conversion to lead and engagement in dialogue as the outcome variable. Furthermore, the combination of human–casual is predicted to have the lowest performance in both cases. These trends are inconsistent with H5 and H6, which means that the data does not support any of the hypotheses tested.

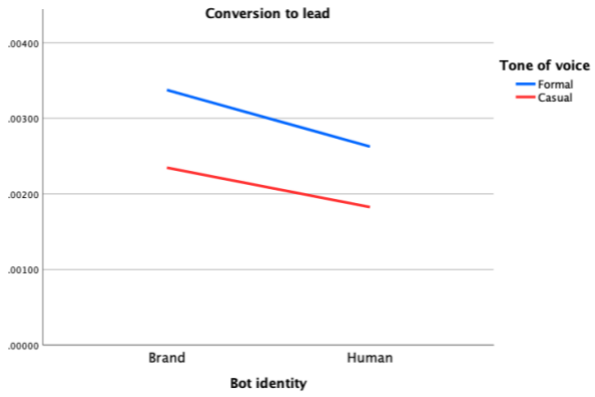

Figure 11. Predicted values: conversion to lead in E2a.

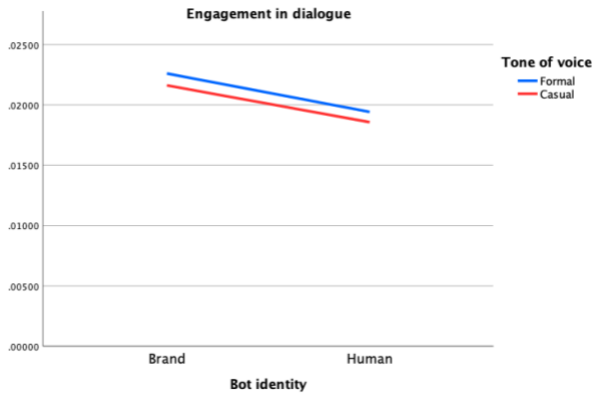

Figure 12. Predicted values: engagement in dialogue in E2a.

Experiment 2b

Following the procedure in E1b, Experiment 2b was run on a sub-page where visitors are close to the main conversion of contacting the firm to make a contract. The same conversation structure was used as in Experiment 2a. Table 5 presents the descriptive statistics for E2b.

Table 5. Sample and unit distribution in Experiment 2b.

Bot variant	Triggers	Discussions	Leads
B1 (brand–formal)	1080	29	3
B2 (brand–casual)	1009	31	6
B3 (human–formal)	1059	24	1
B4 (human–casual)	1054	24	5
Total	4202	108	15

Regression models run for E2b data do not reveal main effects for bot identity, i.e. H1 is not supported. For tone of voice, a marginal main effect is found (B = 1.058, p = .070), indicating tentatively that casual tone of voice increases the likelihood of conversion to lead (H2a). No statistically significant evidence is found to support H2b. Furthermore, no evidence is found to support the moderation effects predicted in H3 and H4.

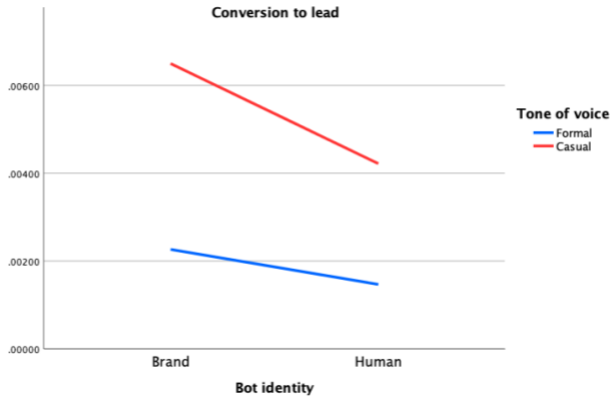

Figure 13. Predicted values: conversion to lead in E2b.

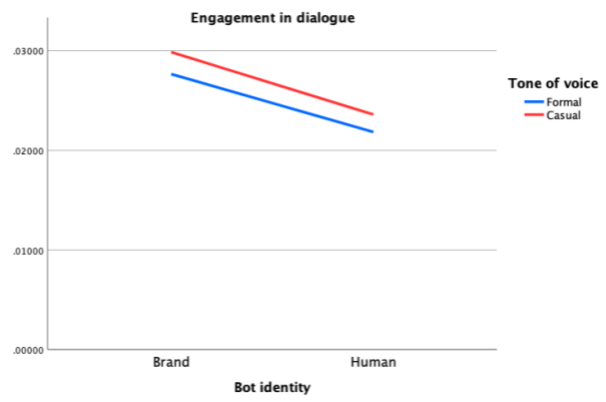

Figure 14. Predicted values: engagement in dialogue in E2b.

Compared with the results of E2a, preference for tone of voice behaves differently. Here, the combination of brand–casual is predicted to perform best (no support for H5), but human–formal is predicted to receive the lowest values for both outcome variables, which supports H6a and H6b. This can be seen in Figures 13 & 14.

Experiments 2a & 2b

Following the procedure in Study 1, the data from E2a and E2b were pooled to test for study-wide associations. Only one marginal main effect is found for bot identity with the outcome variable engagement in dialogue (B = -.173, p = .061). However, inconsistent with H1b, the effect is predicted to be negative. H1a and H2 are not supported. Also, no interaction effects are found, leading to the rejection of H3 and H4. Figures 15 & 16 show how the differences in the datasets even out and result in closely grouped predicted values. For both outcome variables, the combination brand–formal is predicted to receive the highest values (H5 not supported) and human–casual the lowest values (H6 not supported). Differences between the tone variants are practically non-existent. A branded identity is predicted to perform slightly better than its counterpart in all cases.

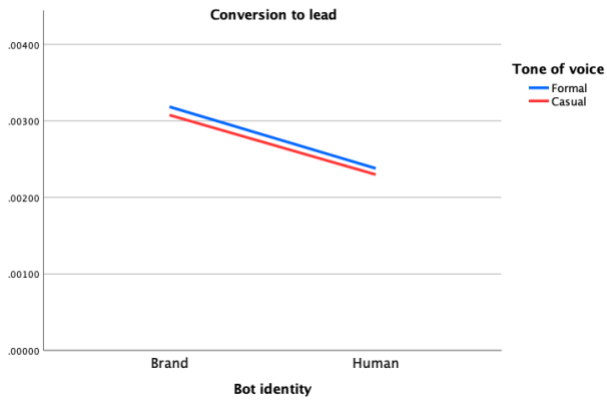

Figure 15. Predicted values: conversion to lead in E2a+b.

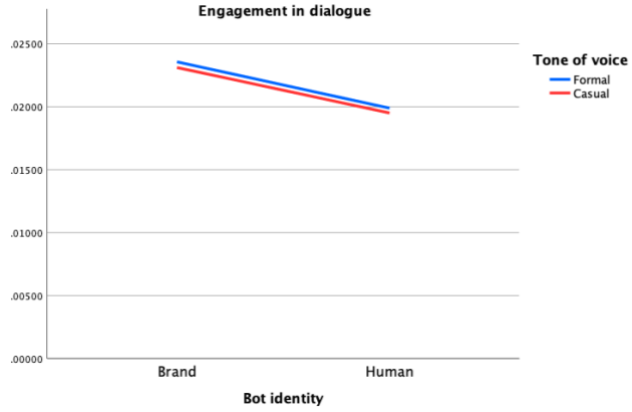

Figure 16. Predicted values: engagement in dialogue in E2a+b.

Study 3

In Study 3, an experiment was conducted on the website of an automotive company to see how bot identity and tone of voice influence micro conversions in a situation where the visitor is looking for more detailed information in the consideration stage of the buyer's journey. The premium brand

and the website in question are characterized by a discreetly stylistic look & feel that is built on design simplicity and graphically striking imagery of the product line up. Textual content on the website addresses the visitor directly but from a distance, meaning that the tone of voice comes across as more formal than casual. To maintain a required level of fit-with-brand, the difference between formal and casual tone of voice variants was the smallest in this study. Casual bot variants were only given subtle cues of closeness, and the use of emoji and other emotional expressions was left to a minimum. The bot identity variants used the brand's most recognizable visual element and a stock photo of a well-dressed middle-aged man with a neutral expression on his face. Like in Study 2, the photo was chosen based on a fit with visual aspects and the qualities that the brand stands for.

Experiment 3

The experiment was placed on the Finnish pricing information page of the brand's consumer-facing website. The bot conversation was designed to ask a few low-threshold opinion-based questions related to personal preferences, in order to engage the visitor. The short dialogue ended with three alternative internal links that the visitor could click to be redirected to another page on the website. The logit models were run for a data set where each click on any one of the three links was equally valued and added together. Table 6 presents the descriptive statistics for E3.

Table 6. Sample and unit distribution in Experiment 3.

Bot variant	Triggers	Discussions	Leads (any link)
B1 (brand–formal)	4687	2040	254
B2 (brand–casual)	4620	1855	166
B3 (human–formal)	4532	1794	212
B4 (human–casual)	4510	1689	122
Total	18349	7378	754

Binary regression models reveal a statistically significant main effect for both bot identity and tone of voice and for each outcome variable. However, contrary to H1 and H2, human identity (B = -.208, p = .005; B = -.138, p = .000) and casual tone of voice (B = -.491, p = .000; B = -.115, p = .000) are predicted to negatively influence the likelihood of conversion and engagement in

dialogue. These results are shown in Figures 17 & 18. No conclusive interaction effects emerge from the data. Predicted values for the combinations brand–formal (highest predicted values) and human–casual (lowest predicted values) are inconsistent with H5 and H6.

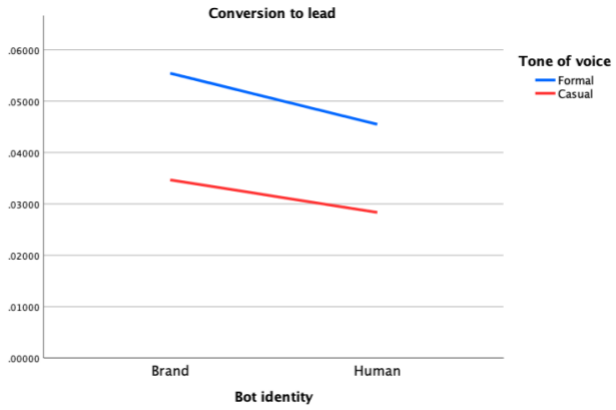

Figure 17. Predicted values: conversion to lead in E3.

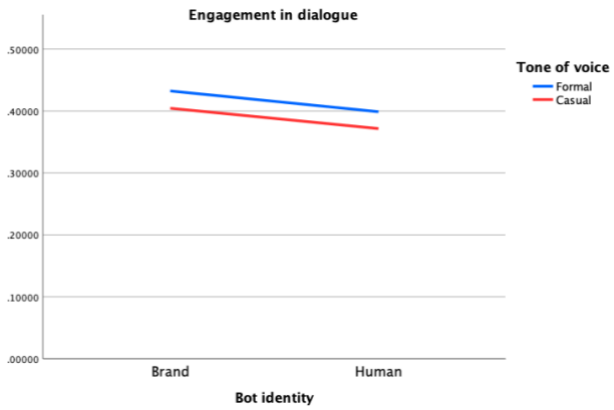

Figure 18. Predicted values: engagement in dialogue in E3.

General findings

Finally, the logit models were run on three compound datasets to test for associations spanning across studies. First, all data from Studies 1-3 was pooled into one set of data. After this, a similar procedure was implemented to $E1_a$ and $E2_a$ together, and finally for $E1_b$ and $E2_b$ together, due to the comparable positioning of experiments in Studies 1 and 2.

Experiments 1-3

Regression models run for all data combined reveal statistically significant main effects for both bot identity and tone of voice, in the case of both two outcome variables. However, the effects for bot identity (B = -.182, p = .009; B = -.113, p = .000) and tone of voice (B = -.398, p = .000; B = -.077, p = .001) are negative, meaning that H1 and H2 are not supported. In other words, considering all data collected for the thesis, a branded bot identity (vs. human identity) and formal tone of voice (vs. casual tone of voice) are predicted to increase the likelihood of conversion and engagement in dialogue. Statistically significant interaction effects do not emerge. Figures 19 & 20 show the predicted values for each bot variant. These values are the highest for the combination brand–formal and lowest for human–casual. The results are inconsistent with H5 and H6.

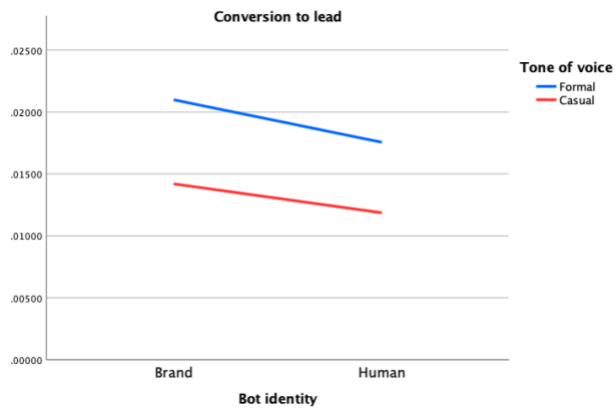

Figure 19. Predicted values: conversion to lead in E1-3.

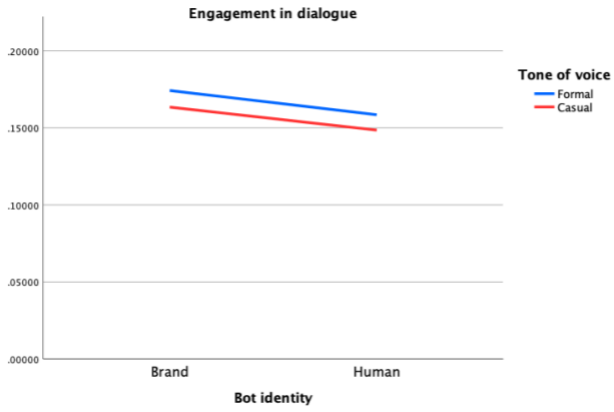

Figure 20. Predicted values: engagement in dialogue in E1-3.

Experiments 1a & 2a

Finally, the similar placement used in Studies 1 and 2 was used to test for associations on the front page experiments and on the conversion page experiments. The same binary models were used as above. For E1a and E2a, none of the hypotheses H1-H4 are supported with statistically significant results. Figures 21 & 22 show how bot identity and tone of voice behave on the front page experiments. For conversion to lead, the combination human–casual (H5a supported) and for engagement in dialogue, the combination brand–casual (H5b not supported) are predicted to perform best.

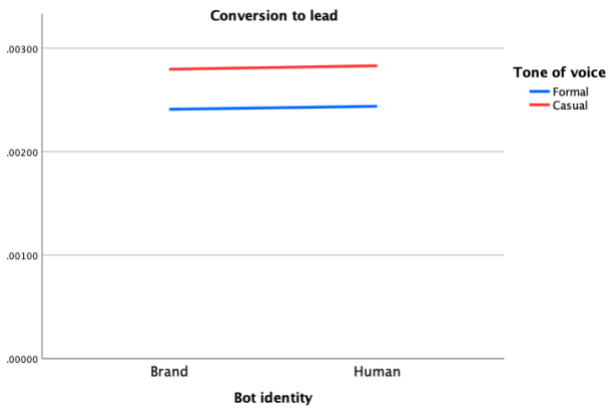

Figure 21. Predicted values: conversion to lead in E1a+2a.

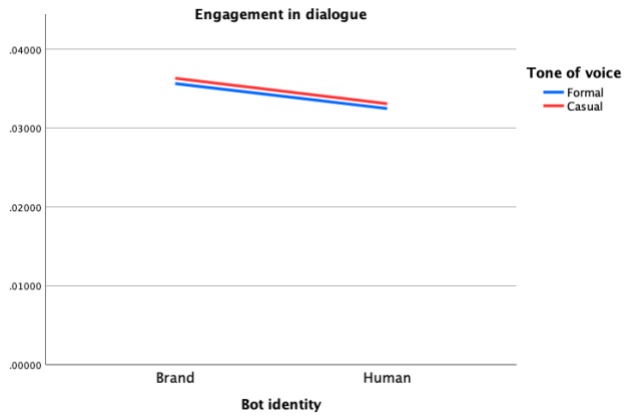

Figure 22. Predicted values: engagement in dialogue in E1a+2a.

In terms of the lowest predicted performance, H6a is not supported, but H6b is supported. For conversion to lead, casual TOV outperforms formal TOV, but very little evidence of a difference between the bot identity variants is found. For engagement in dialogue, a branded identity is

predicted to perform higher than a human identity, but the effect of tone of voice on predicted values is practically non-existent.

Experiments 1b & 2b

Lastly, the logit model run with data from E1b and E2b does not reveal results to support hypotheses H1-H4. Only a marginally significant effect is found, indicating that a humanized bot identity decreases the likelihood of engagement in dialogue (B = -.287, p = .094). This result suggests the opposite of what was expected in H1b. Figures 23 & 24 show evidence that supports H5a. On the other hand, H5b and H6 are not supported by the data. The performance of both bot identity and tone of voice is flipped between the outcome variables. On the experimented sub-pages, casual tone of voice is predicted higher performance than formal TOV in terms of conversions, and only a minor difference is found between bot identity variants. For engagement in dialogue, formal TOV performs better than casual TOV, and a slightly clearer difference is predicted in the advantage of the branded bot identity.

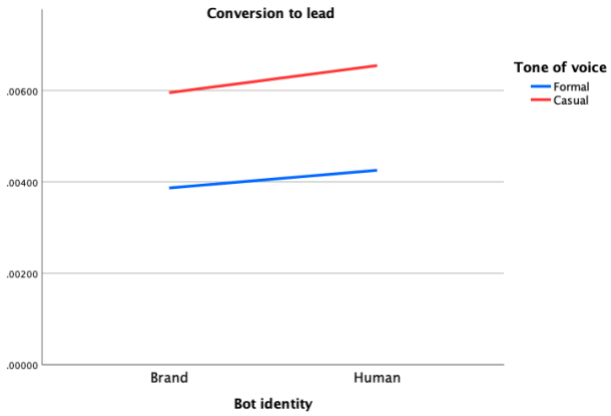

Figure 23. Predicted values: conversion to lead in E1b+2b.

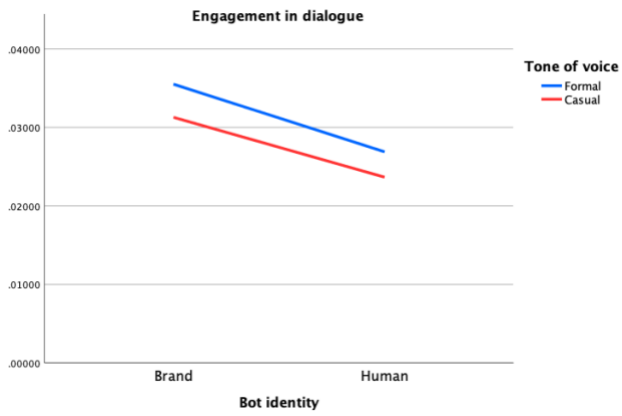

Figure 24. Predicted values: engagement in dialogue in E1b+2b.

5 Discussion

The thesis now proceeds to discussing the results of conducted experiments and analyses. Each study is discussed separately, and the chapter concludes with discussion on the main across-study findings. In this section, findings are synthesized and reflected with key theoretical concepts and prior research. The discussion addresses the research question of the current thesis.

Study 1

Findings from Study 1 are mixed, but they provide some guidance for future development. In both experiments, a branded identity performs slightly better in terms of initiated dialogues, but as users are tracked all the way to conversion, a humanized bot becomes more effective. This switch is pronounced for casual TOV in E1$_a$ and for formal TOV in E1$_b$. It may be that visitors feel more comfortable initiating an interaction with the brand rather than a person. At the same time, those who are genuinely interested in becoming a customer prefer to have conversations with a human touch, which suggests that, in this case, humanized bots better support the three dimensions of interactivity (Liu & Shrum, 2009) and induce a stronger sense of flow (Csikszentmihalyi, 1990).

Considering the placement of bots, the preference for tone of voice changes as website visitors proceed from the front page to the sub-page and the latter phase of the buyer's journey. On the front page, casual tone of voice is predicted to perform better than formal TOV, but on the sub-page, when visitors are closer to the conversion, formal TOV yields better results. This could be related to the notion about sociability vs. productivity (Hausman & Siekpe, 2009; Brandtzaeg & Følstad, 2017). That is, it seems that visitors prefer to receive a warm welcome to the website (front page), but when the visitor has decided to request to be contacted (sub-page), the formal and less decorative tone provides better support for achieving this goal.

Both experiments taken together, very little difference is found between the predicted values of the four bot variants in terms of visitors' engagement in dialogue. On the other hand, a more distinct difference is anticipated in the bot variants' effectiveness to convert visitors into leads, as human–casual emerges as the strongest combination. These findings suggest that a humanized bot and casual TOV make the beneficial outcomes of interactivity and flow, as listed in Figure 2 based on Hoffman & Novak (2009), more prevalent on the specific website.

In summary, the main conclusion from Study 1 is that bots designed with a human and casual touch can be expected to bring better results. However, the contradicting results from $E1_a$ and $E1_b$ as well as between the outcome variables suggest that neither branded or humanized bot identity nor formal or casual TOV are strongly preferred. When analyzing data from both experiments together, only one marginal preference was found for casual tone of voice in driving conversions.

This overall result may be due to the newness of the brand, i.e. the audience has not established clear expectations or relationship with the brand (Aggarwal & McGill, 2012), and thus no bot variant is clearly preferred by the audience. The question, therefore, is more about which direction the brand wants to choose in developing its communication style and customer relationships. Results indicate that it is in a good position to begin focusing its approach, as none of the tested attributes performs remarkably weaker than its counterpart. However, a humanized and casual approach seems to resonate better with the brand's target audience.

Study 2

Study 2 repeated a similar experiment design that was used in Study 1 but produced different results. In $E2_a$ and $E2_b$, a branded bot identity is predicted to perform better than a humanized one in every case, but none of the results reach statistical significance. This suggested preference remains stable when moving from the front page to the sub-page and occurs for both outcome variables. That is, a branded bot seems to be more effective in engaging visitors to have a dialogue and to convert. A conclusive explanation remains unknown, but the results suggest that visitors of the site prefer to have a non-human conversation, which could be due to for example many of them bidding for energy providers and thus wanting to maintain certain distance. On the other hand, preference to keep a distance may be an indication of high situational involvement (Barcelos, et al., 2018).

More can be said about the behavior of tone of voice. For front page conversations, formal TOV consistently outperforms casual TOV, although no statistically significant results emerge. The situation changes on the sub-page, where casual TOV becomes the higher-performing option for both outcome variables. Only one marginal main effect is found, indicating that casual tone of voice increases the likelihood of conversion on the sub-page, but the difference compared to formal TOV is considerable at 106%. The switch in preference for TOV between the front and sub-page is opposite to what happens in Study 1. Here, people seem to be more comfortable interacting with

the brand on the front page but seek sociability on the sub-page. This phenomenon could be related to context: in Study 1, B2B customers may appreciate efficiency when making purchase decisions, whereas for the energy company in Study 2, consumer customers are perhaps looking for the sociability aspect right at the point of conversion. Such a context-dependent effect cannot be confirmed in the current thesis but should provide an interesting avenue for further investigation.

As data from $E2_a$ and $E2_b$ are pooled, clear indications diminish, which is to be expected considering the contradicting results between the experiments. Bot identity and tone of voice are predicted to behave very consistently for both outcome variables: tone of voice variants perform nearly identically, and branded bot identity performs slightly better than a humanized bot. Although no statistically significant differences emerge, the preference for a branded bot can be taken as a signal of a true effect, because a similar pattern occurs in both experiments. This conclusion is slightly surprising, because the humanized bots in Study 2 used an image of a woman with a positive expression, which was anticipated to receive favorable responses.

In this case, the positive outcomes of human presence listed by Hausman & Siekpe (2009), Schroll et al. (2018) and Hassanein & Head (2007) do not receive support. The visitors may have experienced the woman's face as fake and therefore less likeable and, due to limited conversational capabilities, the humanized bot may have fallen victim to the uncanny valley (Mori, et al., 2012; Mathur & Reichling, 2016). Also, the attractive–expert dimensionality may have come into play, rendering the human bot as lacking expected competence (Holzwarth, et al., 2006). As the results remain insignificant, making conclusive statements would require further experimentation with different humanized bot variants. Based on the current study, the focal firm may receive more beneficial outcomes by using branded conversational bots with a formal tone of voice, but as mentioned, the differences are expected to be small.

Study 3

The final study differed from the other two in design and produced the clearest results. Contrary to what was hypothesized, branded bot identity and formal tone of voice consistently outperformed their counterparts. Furthermore, the results are statistically significant for both outcome variables. Even though unexpected, the results are understandable considering the context of Experiment 3: the website and the brand have a very distinct style, which is better matched by the logo as the bot's avatar and a more formal communication style.

In terms of bot identity, humanized bots stand out from the website more than the logo, but not in a positive way. A humanized bot performs approximately 20% worse for conversions and 14% worse for initiated dialogues. The results suggest that visitors prefer to maintain a certain level of distance in the specific phase of the buyer's journey. Distance from the purchase decision may have caused them to prefer a conversation where they do not feel pressured by the presence of a human counterpart. This effect may be amplified by visitors' cautious attitudes towards car salespeople, resulting in a preference for the faceless bot. Also, Mende's (2019) notion of identity threats experienced by the visitors should be considered as a plausible explanation.

Because the difference between formal and casual bot variants was the smallest in this experiment, the results point out how solid of an image the brand has established in consumers' minds. Casual TOV variants were only given modest elements of warmth and conversational tone, but despite the safeness, they performed 49% worse for conversions and 12% worse for initiated dialogues. Overall, the result is even more considerable than for bot identity, indicating that there is little room for a casual approach on the brand's website.

The most likely explanation for the results is the strength of the brand in question: its customers have learned to expect a certain style, which is conflicted by humanized and casual bot variants. Results emphasize the importance of understanding situational factors (Song & Zinkham, 2008) as well as the target audience, their motivations, and relationship with the brand (Brandtzaeg & Følstad, 2017) when designing chatbots. The different definition of a conversion in E3 should be noted once more. A click on any of the three links at the end of the bot conversation counted as a conversion, and it is clear that converted visitors were still farther away from the final purchase decision than in Studies 1 and 2. This known limitation may have been crucial in finding statistically significant main effects (larger amount of conversions), but at the same time, made it more difficult to find an association between the independent variables and business outcomes.

General discussion

Across-study analyses brought up further evidence that contradicts with what is hypothesized in the thesis. Most notably, pooling data from all three studies revealed results in favor of a branded bot and formal tone of voice. These findings, however, need to be taken with caution, because the results of E3 have the greatest impact on the overall outcome. This is shown by the fact that

differences for the entire compound data set are smaller than in E3. In other words, Studies 1 and 2 diminish the performance increment of branded identity and formal TOV in the big picture.

The effectiveness of bot identity is found difficult to predict. Overall, the performance differences between a branded and humanized bot are modest. This may be due to the machinization of all bot variants, i.e. also bots with a human identity made it clear to visitors that there was no real human having the conversation – a choice made to ensure collection of reliable data. In Studies 2 and 3, bot identity behaves consistently, rendering a branded bot more effective. Study 1 diverges from this pattern in that bot identity preference changes with the predicted outcome variable. Data collected for the current thesis does not provide a conclusive explanation for this, but it can be suggested that the B2B context is partly behind the phenomenon, as the other two studies were conducted in a consumer business environment. More experimentation is required to better understand how firms can choose the most effective identity to represent the brand in conversations with customers on the website.

In general, tone of voice seems to be more sensitive compared to bot identity. In most cases, TOV is predicted to have a bigger impact on conversions than initiated conversations. That is, the differences become more apparent when users continue the dialogue with the brand. It can thus be drawn that tone of voice influences the flow experienced by the user: when TOV matches users' expectations and fits the brand, visitors are more likely to continue the conversation all the way to the end. Drawing from Kelleher (2009) and Gretry et al. (2017), familiarity with the brand is expected to support a casual approach, but on the other hand, lack of an established relationship easily renders a casual style damaging. Also, use of emoji increases warmth but decreases perceived competence (Li, et al., 2019). Given that all three studies were conducted in a high involvement context (automotive, energy, and B2B software), a somewhat stronger support for branded bots and formal tone of voice seems reasonable.

Perhaps the most interesting observation related to the independent variables is how the effectiveness of formal and casual tone of voice variants changes with bot placement along the buyer's journey on the website. Specifically, the fact that this change has the opposite direction in Studies 1 and 2 again suggests a difference between B2B and B2C, and the phenomenon deserves more attention. It may well be that, besides being brand-dependent, the performance of bot identity and tone of voice behaves differently in business and consumer contexts.

The discussion above addresses the research question ‘How do chatbot identity (brand – human) and tone of voice (formal – casual) influence the likelihood of conversion and engagement in dialogue on a corporate website?’. The main conclusion based on conducted studies is that clear differences in performance are scarce and that the direction of results is likely to depend on the brand in question as well as the business context and involvement level of the website visitor. The results do not support generalizable statements about how a company should design its chatbot conversations. Statistically significant results are limited to main effects, and possible moderation effects remain out of sight across the three studies. It should be noted, that lacking definitive findings, the observed behaviors could result from random variation. Despite the fragmentation of results, indifference should not be ruled out as a valid finding.

6 Conclusions

This concluding chapter discusses the contribution of the thesis from the perspectives of theory and managerial practices. Findings from the empirical part are synthesized into conclusions and guidelines for firms looking to enhance their customer-firm dialogue and conversion effectiveness on the corporate website. The current research is evaluated by considering its limitations, and finally, directions for future research are suggested.

6.1 Implications

The current research complements the existing body of research on interactive website features by measuring the effectiveness of chatbot identity and tone of voice on conversions and engagement. The studies do not produce strong generalizable findings, but add a novel perspective to the underlying factors that may determine the effectiveness of chatbot conversations.

Regarding bot identity, it is shown that website visitors may prefer either a branded bot or a humanized bot depending on the situation. As discussed in the theoretical review, both alternatives have their pros and cons, and in its varied findings, the current research confirms this. Presenting the bot with a non-human visual element (e.g. brand logo) maintains distance between the visitor and the brand, which may be desirable when the potential customers want to avoid the feeling of being pressured to do business with the brand. The benefits of social presence and human warmth show in some of the results, but perhaps more notably, and somewhat surprisingly, findings stress the potential negative effects of using a humanized assistant. This notion supports the existence of the uncanny valley in chatbot conversations. Deriving from these conclusions, it is suggested that a branded bot identity is in general a safer choice. Humanized bots may perform better with AI-based solutions that have more sophisticated and therefore more human-like conversational capabilities.

In terms of tone of voice, fit-with-brand emerges as the main factor determining chatbot performance. The research highlights consumers' ability to spot incongruities between their expectations and the presentation of the brand. Also, mismatch between the chatbot conversation and the website's general look and feel is found to diminish the performance of a conversational interface. Similar to branded bot identity, formal tone of voice can be considered the safe option, whereas a casual approach seems to result in the highest but also the lowest performance. In other

words, risks involved with a casual approach are higher, but so are potential returns, as long as the communication style matches the brand. The results show, that even though finding the right balance with bot identity and tone of voice may require extensive experimentation, the best combination is likely to bring considerable benefits in revenue.

The current research suggests that consumers' preferences for chatbot conversations vary according to their expectations towards the brand, relationship with the brand, and the situational involvement and business context (B2B or B2C) of the conversation. Additionally, empirical findings suggest that preference also depends on the stage of the buyer's journey that the customer is in. All in all, the current research provides valuable guidance for conducting similar future studies. It highlights some of the crucial aspects that should be considered when conducting true experimental research in the online environment. At the same time, this research paves way for modern research ventures related to the increasingly relevant space of conversational interfaces and online conversions.

For managers, mixed findings stress the importance of knowing and understanding the company's customers and their relationship with the brand. Based on the findings of the conducted studies, the effectiveness of a branded vs. humanized bot identity and formal vs. casual tone of voice is highly dependent on the brand in question. Furthermore, results suggest that the contexts of B2B and B2C may benefit from a categorically different approach. Situational factors and the target audience's motivations and relationship with the brand should be studied and understood before implementing interactive conversational features on the website.

One size does not fit all. This view should be adopted when designing and implementing chatbots on corporate websites. Choices related to bot identity include specific pitfalls, and tone of voice is perhaps an even more critical variable. When making choices regarding these variables, managers should consider how the bot's avatar fits in with the website's content and whether customers expect a human assistant or would prefer to maintain distance and anonymity by chatting with a non-human counterpart.

The tone of voice of bot conversations should be matched with the brand's general communication style. This can be expected to bring best possible results, because the visitors' expectations will be met, and harmful confusion avoided. In defining tone of voice for bot conversations, managers should consider productivity gains and social motivations as drivers behind the users' behavior.

Also, managers should be aware that communication style and bot appearance affect how website visitors perceive the conversational counterpart. For example, changes to tone of voice can turn an expert virtual assistant to a friendly but incompetent one.

Consumers accurately perceive incongruities between interactive features and their own expectations, which can have sizeable negative effects, especially when the brand in question is well established. Finding conclusive case-specific answers regarding bot effectiveness requires rigorous testing. Overall, firms should consider website conversations as touchpoints that require continuous attention and adjustment as the brand and the business environment evolve. As technologies for improved user identification and natural language processing develop, firms will become better equipped to target for example new and returning visitors with a highly personalized approach.

Current trends point to an increase in the use of chatbots and conversational interfaces for connecting with visitors on the corporate website and across the internet. The technology has several use cases, including sales lead generation, customer service, and talent acquisition. It is expected that conversational features will become more common in digital channels even outside of the company's own web domain. By starting to study target audiences and shape conversations according to the brand, firms will be in a better position to gain benefits from the increasingly conversational online business environment in the future.

6.2 Evaluation and Limitations

As discussed in Chapter 3, the current research design and methodology provide reliable results due to a natural and unbiased observation technique and accurate data. The chosen methodology also controls the effect of external variables. A weakness is that the experiments produce a simplified image of the phenomena at hand, and much room is left for analysis and further hypothesizing. For example, the research cannot provide conclusive answers to questions like how and why certain results are attained. More qualitative aspects should be considered to find out for example how website visitors experience different chatbots.

Following from the research design, validity of the findings is ensured. Reliability is somewhat compromised due to the rarity of conversion events. Therefore, similar future experiments may produce different results, as minor changes in outcomes may sway results significantly. Time

restrictions did not allow longer experimentation, but future studies should consider that finding conclusive results may take longer than expected, especially when conversions are relatively rare. Issues with generalizability become apparent in the mixed findings. As concluded in previous sections, situational factors and the brand in question are expected to highly influence the preference for bot identity and tone of voice. Thus, the lack of generalizable across-study findings is not a major issue.

An obvious limitation related to the bot identity variable and subsequent findings is that only one version of a branded and humanized bot was used in each experiment. This procedure is acknowledged to have its impact on the results. For example, it is unknown how the gender and appearance of the chosen humanized bots affected the outcomes. The simplification of tone of voice into formal and casual variants also includes a certain problematic. Given the experimental design, there is no guarantee that test subjects perceived the tone variants as formal and casual, as personal interpretations of communication style vary between individuals. Overall, the research produces accurate data but at the same time compromises depth for simplification.

The research does not raise considerable ethical concerns, as the experimental environment is not sensitive, and test subjects are not linked to identifiable data in results. Personal information collected from converted leads is undisclosed and irrelevant to the purposes of the current research. Future studies may approach the topic from an angle that makes use of more detailed demographic information. In such a case, undisguised observation should be a preferred choice. Finally, at the time of conducting the research, the researcher was in an employment agreement with the software company, whose technology was used in the experiments. No financial compensation or other benefits were tied to the results of the research, meaning that conflict of interest is not a concern.

6.3 Future Research

The current research presents a set of interesting avenues for future research. First, a similar research design could be implemented to study gender differences in chatbot performance. It can be assumed that for humanized bots, bot gender influences the outcomes of conversations. Also, future studies could find valuable information by complementing bot performance with user demographics, including gender and age. Intuition suggests that the sexes will respond differently to a male and female bot, and that for example age could explain preference for tone of voice.

Another research direction emerges from the findings related to differences in business context, namely between B2B and B2C. Empirical findings of the current research suggest that categorical differences may exist regarding the preferences of corporate and consumer customers. Discovery of conclusive differences between the two cases would provide ample guidance to businesses operating in both contexts. The same holds true for differences along stages of the buyer's journey.

The concept of perceived interactivity was covered in the theoretical review, but the current research focuses on modifying functional, i.e. actual, interactivity on the websites. Therefore, interactivity perceptions could be studied with chatbots overall and with different bot variants. Finally, to find further evidence of the incremental business performance gains of chatbots, future studies should also experiment bots with a control version of a web page. Showing conclusively whether chatbots increase conversion rates and engagement compared to traditional web forms or other means of contact would inevitably attract subsequent research ventures.

Finally, research on chatbots that allow the user to type freely (AI-based solutions) would open up different perspectives to bot identity, tone of voice, and other aspects of the conversation. For instance, changes in a bot's tone of voice could be reflected with changes in how the user communicates within the conversation.

The possibilities for agile experimentation in the digital world are practically endless. This presents opportunities for both scholars and managers in conducting non-forced true experimentation. The difficulty is in finding generalizable results, as the context and brand in question largely determine the nature of interaction. The challenge stresses a need to combine qualitative and quantitative efforts to understand how consumers experience interactions with brands online.

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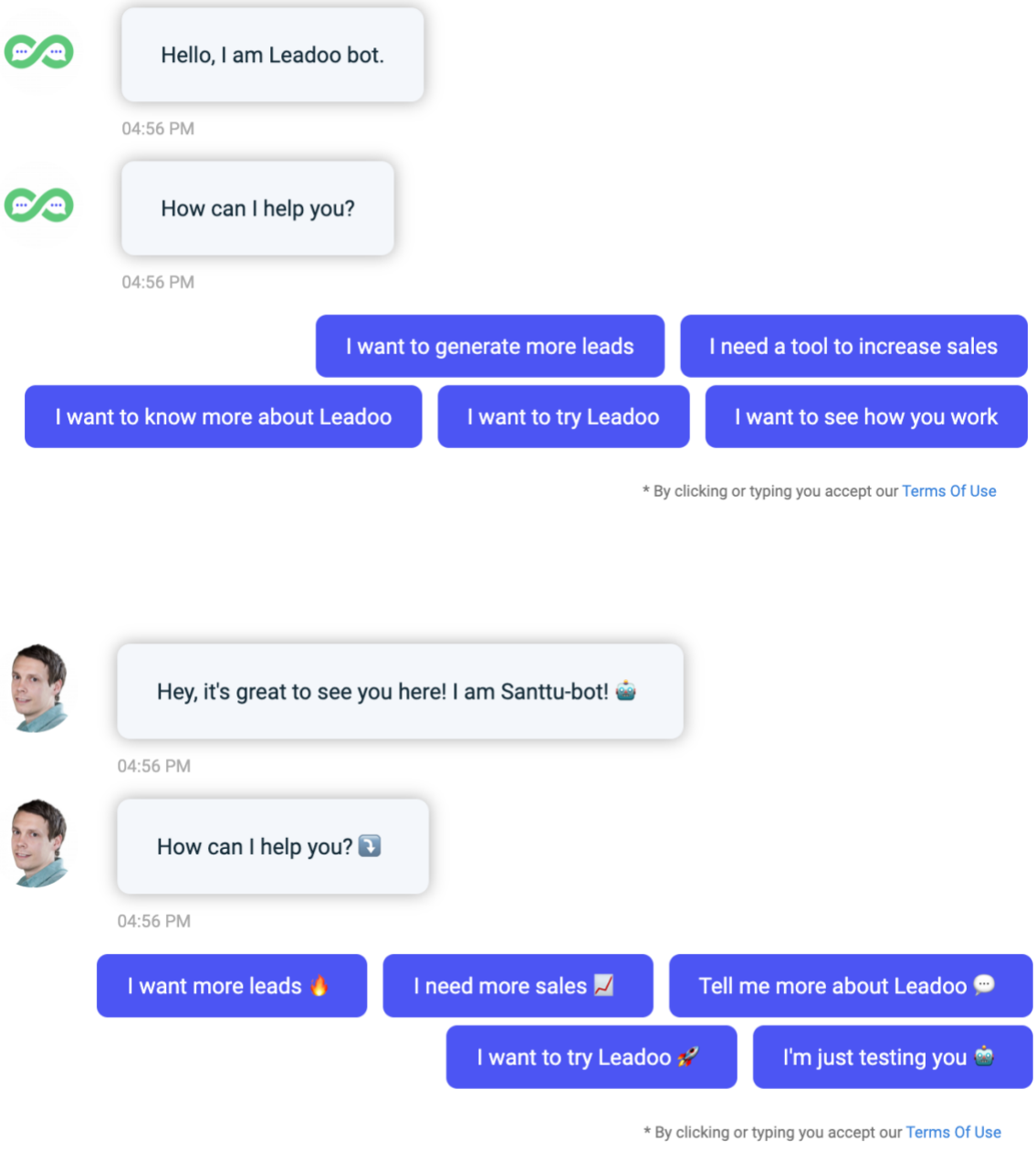
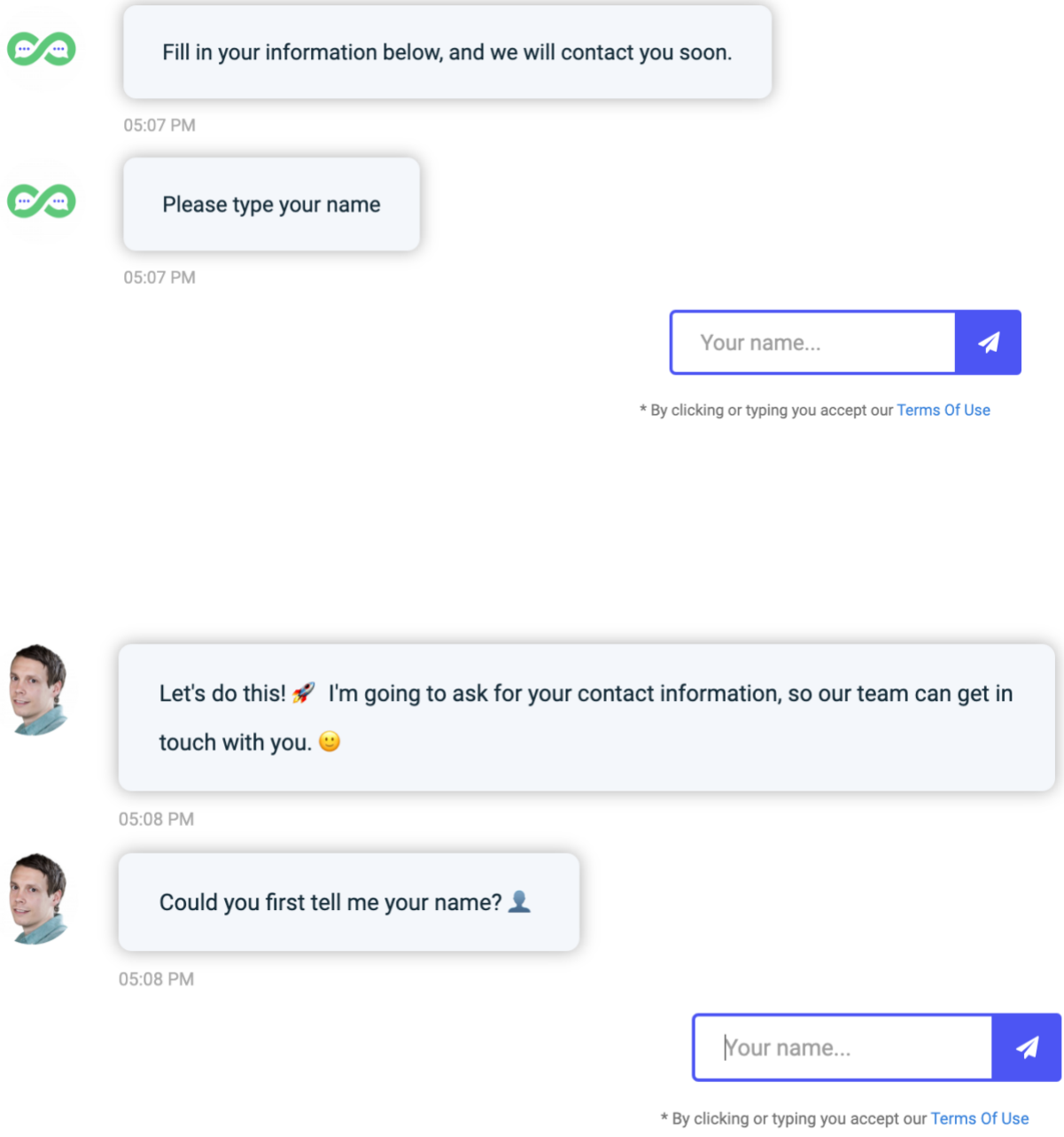
Appendices

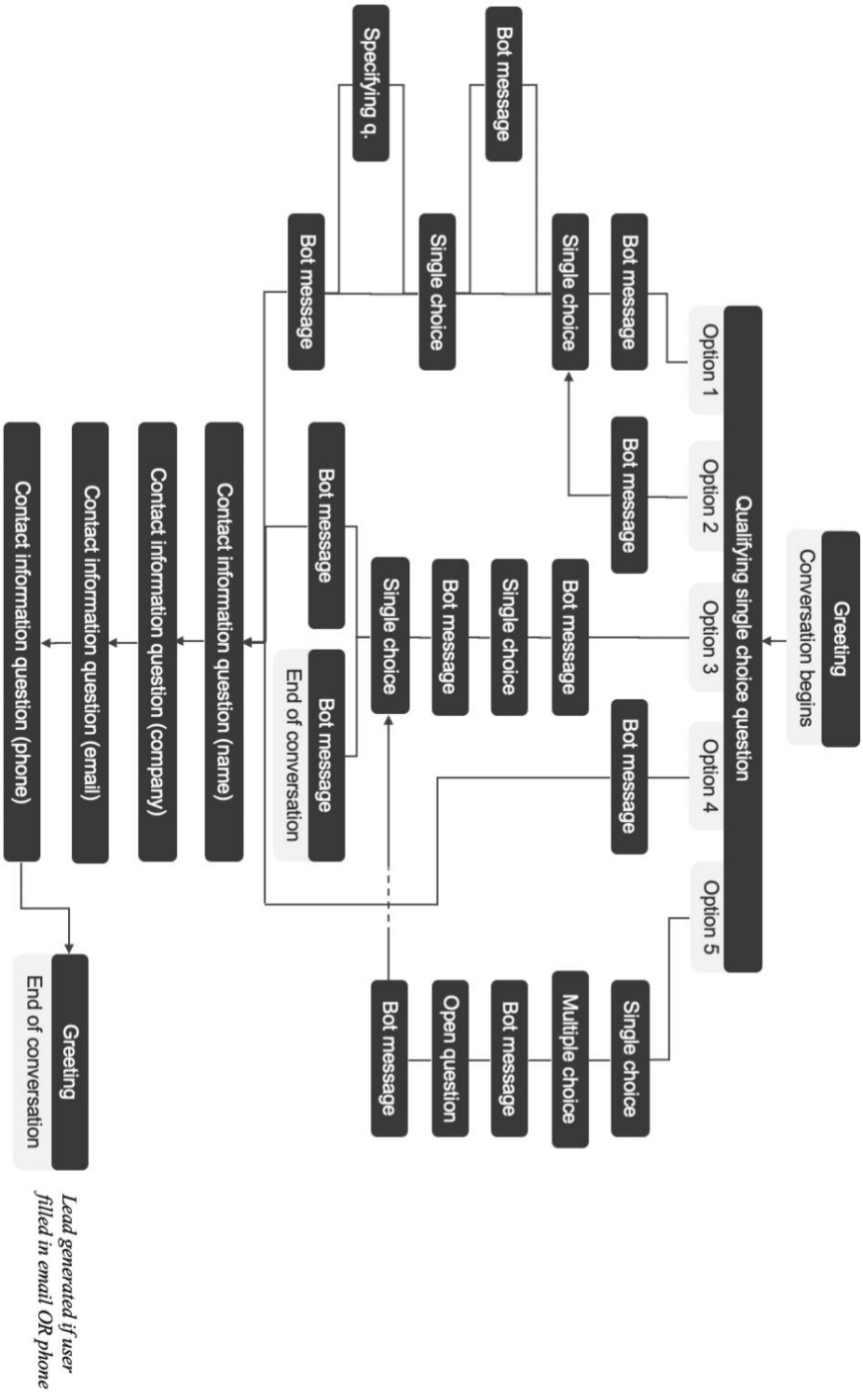
Appendix 1. Examples of bot variants in E1a. Branded identity & formal tone of voice (top) and human identity & casual tone of voice (bottom).



Appendix 1. (continued)



Appendix 2. Outline of the bot conversation in E1a.



Appendix 3. Outline of the bot conversation in E_{1b}.